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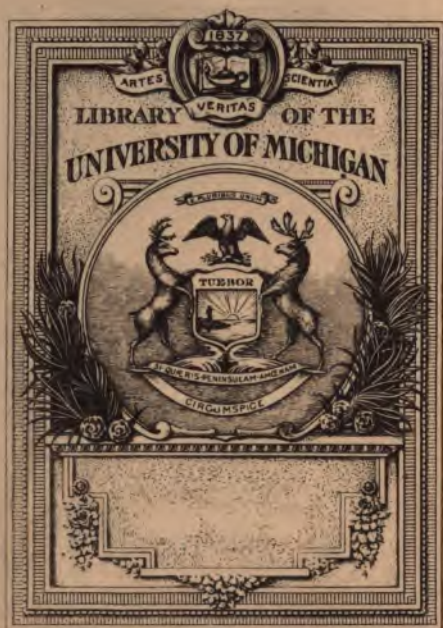
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RATIONAL ATHLETICS
FOR BOYS AND GIRLS

REILLY



D. C. HEATH & CO.



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**NEW
RATIONAL ATHLETICS
FOR BOYS AND GIRLS**

BY
FREDERICK J. REILLY
PRINCIPAL, PUBLIC SCHOOL 33, THE BRONX
NEW YORK CITY

D. C. HEATH & CO., PUBLISHERS

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PREFACE

Two years ago, the writer published "Rational Athletics for Boys." "New Rational Athletics for Boys and Girls" is not a revision of the former work, but an entirely new book, fundamentally different, in that the author has definitely discarded the "Grade Standards" on which his system was formerly based. Moreover, in this book he has completed the program for girls, which was only outlined in the earlier publication.

The present work includes several plans for taking up this system of physical training, proceeding from the very simplest form to the complete system, so that the teacher in any school can take up the work and develop it just as far as his judgment and the special conditions warrant.

The present general movement toward "preparedness," the new recognition of the necessity for physical fitness, and the enactment of laws requiring more attention to physical training in the schools combine to give this book a more than usual timeliness.

F. J. R.

NEW YORK,
March 31, 1917.

CONTENTS

	PAGE
PREFACE	iii
LIST OF ILLUSTRATIONS	vi
I. INTRODUCTORY	1
II. ORGANIZATION OF THE PHYSICAL TRAINING PERIOD	10
III. TEACHING THE EXERCISES	27
THE EXERCISES IN DETAIL: Running, — Potato Race, 29, Sprints, 32; Hop, Step and Leap, 35; Broad Jump, 37; High Jump, 40; Chinning the Bar, 42; Grip, 44; Shot Put, 46; Pitching, 52; Basket Ball Goals, 53; Combination Dip, 54; Trunk Lifting, 58; Chest Expansion, 60; Baseball Throwing or Pitching, for Girls, 61; Serving in Tennis, 63; Basket Ball Throw (<i>for distance</i>), 65; Putting in Golf, 68; Driving in Golf, 69.	
IV. THE CLASS ATHLETICS SYSTEM	74
V. ORGANIZATION OF MONTHLY INTER-CLASS MEETS	82
VI. THE POINT SYSTEM AND INDIVIDUAL CLASSIFICATION	94
The Point System, 96; Revised Classification, 99.	
VII. THE STANDARDS BASED ON INDIVIDUAL CLASSIFICATION	106
Posture, Alertness, and Hygiene, 106; Chest Expansion, 107; Strength of Grip, 110; Potato Race, 111; Standing Broad Jump, 112; Hop, Step, and Leap, 112; Basket Ball Goals, 113; Pitching, 113; High Jump, 114; Shot Put, 115; Chinning the Bar, 116; Combination Dip, 117; Trunk Lifting, 117; Exercises for Girls:— Putting in Golf, 120, Serving in Tennis, 120, Driving in Golf, 121.	

CONTENTS

v

VIII.	COMPETITION IN SCHOLARSHIP AND ATHLETICS	123
IX.	THE PENTATHLON	129
X.	TROPHIES AND PRIZES	133
	For the New Form of Class Athletics, 134; For Inter- Class Meets, 135; Prizes for High Rating in Athletics 136; Prizes for the Pentathlon,	138

LIST OF ILLUSTRATIONS

Victor Lamberti: All-Around Champion, 1917	<i>Frontispiece</i>
Plate 1.—Squad Leader's Card: Boys	<i>Page</i> 12
Plate 2.—Squad Leader's Card: Girls	13
Plate 3.—Wall Chart: Boys	16
Plate 4.—Wall Chart: Girls	17
Plate 5.—Floor Plan: Boys	19
Plate 6.—Floor Plan: Girls	23
Plate 7.—Potato Race	31
Plate 8.—Crouch Start	33
Plate 9.—Broad Jump: Ready	49
Plate 10.—Broad Jump: Correct Landing	38
Plate 11.—Chinning: Good Form	43
Plate 12.—Chinning: Bad Form	43
Plate 13.—Grip Exerciser	45
Plate 14.—Grip Testing.	45
Plate 15.—Shot Put: First Position	47
Plate 16.—Shot Put: Second Position	50
Plate 17.—Shot Put: Bad Form	51
Plate 18.—Pitching Target: Boys	52
Plate 19.—Combination Dip: Taking Places	55
Plate 20.—Combination Dip: Ready	55
Plate 21.—Combination Dip: First Count	56
Plate 22.—Combination Dip: Second Count	56
Plate 23.—Combination Dip: Third Count	57
Plate 24.—Testing the Combination Dip	57
Plate 25.—Trunk Lifting: First Position	58
Plate 26.—Trunk Lifting: Second Position	59
Plate 27.—Testing Chest Expansion	60
Plate 28.—Target for Baseball Throwing	62
Plate 29.—Serving in Tennis: The Net	63

LIST OF ILLUSTRATIONS

vii

Plate 30. — Serving in Tennis: 1	64
Plate 31. — Serving in Tennis: 2	65
Plate 32. — Basket Ball Throw: 1	66
Plate 33. — Basket Ball Throw: 2	67
Plate 34. — Putting in Golf	68
Plate 35. — Addressing the Ball.	70
Plate 36. — At the Top of the Swing	70
Plate 37. — At the End of the Swing	70
Plate 38. — Putting in Golf: Bad Form	70
Plate 39. — Driving in Golf: The Cage Closed	71
Plate 40. — Driving in Golf: The Cage in Use	72
Plate 41. — Score Card: Monthly Inter-Class Meets	84
Plate 42. — Floor Plan: Potato Race	91
Plate 43. — Floor Plan: Field Events	93
Plate 44. — Revised Classification and Membership Card	98
Plate 45. — Revised Standards: Boys	104
Plate 46. — Revised Standards: Girls	105
Plate 47. — Table of Results	118
Plate 48. — The School Emblem	127

**NEW RATIONAL ATHLETICS
FOR BOYS AND GIRLS**



VICTOR LAMBERTI—ALL-AROUND CHAMPION, JANUARY, 1917

Grade, 7B; Age, 14 yr. 5 mos.; Height, 5 ft. 3 in.; Weight, 124 lb.; Shot Put (6 lb. Medicine Ball), 37 ft.; Potato Race (100 yds.), 22 sec.; Chinning the Bar, 10 times; Hop, Step, and Leap, 32 ft.; Combination Dip, 20 times.

NEW RATIONAL ATHLETICS FOR BOYS AND GIRLS

I. INTRODUCTORY

THE system here presented is simply an effort to carry into effect the avowed purpose of the Public Schools Athletic League, as stated by General Wingate:

“The fundamental purpose which the officers of the league have had at heart since its organization has been to stimulate and encourage the average boy—in fact, the boy who is physically below the average—to so train his body that he will become erect, healthy, and strong, and his mind, so that he will become manly, alert, and honorable. The best manner in which this can be accomplished has been ascertained to be through competitive exercises.” (*Minutes of Tenth Annual Meeting.*)

The most elementary books on psychology tell us that there are two ways of presenting a subject to students: one, the scientific

method — the orderly arrangement of facts, as the adult mind grasps them after mature study; the other, the psychological method, in which an effort at least is made to develop the interest of the student to the point where he just naturally wants to go on, to know more, to become more proficient in the given subject. In some subjects, it is hard to arouse this interest, perhaps because the child's mind is not ready to take them up at the time we want him to do so. But children are always ready to *play*, and it is strange that physical training teachers have so generally failed to study their children, to learn what they like to do, and to make that natural liking fit into a well organized scheme of physical development. They have studied the boy's body and have prescribed series of exercises that will develop this, that, and the other muscles, that will help to secure coördination and inhibition, and to correct weaknesses here and there. But they have not studied the boy's mind to find out how to get him to be keenly anxious to do those things that will make for sound physical development. And one need not be a profound

student of human nature to know that set forms of exercise seldom achieve their end. Few indeed are the adults who can consistently follow a set of exercises for the benefit to be derived from them; to expect children to do so is little less than absurd.

Studying the natural interests of children and, through these interests, leading them on to do just what you want them to do, is not surrendering to them and merely amusing instead of training them. Our boys and girls learn to take the bitter with the sweet. They learn the formal work prescribed by the course of study as quickly as possible because they know that this must be done before they are allowed to go to the athletics. They practice Chinning, Combination Dip, etc., because these exercises are sandwiched in between the more interesting things and count just as much in points; and this, we believe, is the logical application of the doctrine of interest to the problem of physical training.

Rational Athletics consists, on the one hand, of a series of things most of which children really like to do; on the other, of

a series of things which, taken together, constitute a pretty thorough all-round set of physical training exercises. In addition to this, the method of carefully regulated competition makes of the whole series *a game* which boys and girls *play to win*, thus bringing to each and all the keen joy and the manifold benefits, physical, mental, and moral, of honest athletic competition. At the same time they are learning, incidentally, the rudiments at least of several wholesome outdoor sports which will be of lasting benefit. It is no small thing to say that every boy in the school is being trained in the Shot Put; Broad Jump; High Jump; Hop, Step, and Leap; Goal Shooting; and Baseball Pitching. It is no small thing to say that every girl in the school (not merely a select few) is learning to throw a baseball and a basket ball, to shoot goals with speed and accuracy, to handle a racket, a putter, and a driver. Who can say what this will mean to them in after years, in health, happiness, and efficiency? Nothing is set down in this book that has not been tried and tested. We have tried many things which we thought

were good; but when experience proved they were not, we dropped them. *We* have done all the experimenting. Whatever is described in these chapters is not what *may be done*, under exceptional circumstances, but what *has been done*, and by teachers not specially trained for the work.

Any school — boys', girls', or mixed — can start Rational Athletics immediately, by organizing the physical training period in the manner described in the following chapter and, later, an Athletic Association holding Inter-Class Meets, — say, once a month. After a term or two of experience the need of a system of handicapping will probably be felt.

We have tried standards of handicapping based on grade alone, but have found them wanting. We therefore recommend, without reserve and as the result of experience, the individual standards described in a later chapter, based on grade, age, height, and weight. We would recommend, however, that the "Point System" be not taken up at the start. It should be an evolution from experience, as it was with us.

Rational Athletics, as a system, is not primarily a matter of records and charts and bookkeeping. It is primarily a plan for getting all boys and girls to take active part in real, live, athletic competitions as the best possible method for all-round physical development. To this end, the program, taken as a whole, will be found to provide vigorous exercise for practically every muscle in the human body. This fact was demonstrated rather forcibly in the case of four men of our corps, including the author, who, without previous practice, put themselves one day through the program of events, as though they were members of the 8B class of boys. I am glad to say they all "qualified," but it is no breach of confidence to say that they were lame and sore for several days after.

The keeping of records should always be secondary to the main purpose, which is exercise — vigorous, wholesome, all-round exercise for everybody. When the physical training period becomes a period in which every *boy and girl* is consciously *training* for an inter-class meet or an individual championship, you have "Rational Athletics,"

whether you use the Point System and keep Individual Records, or not. As previously stated, one term's experience in conducting "Meets" will probably be sufficient to make clear the advantages of a "Point System."

The immediately essential thing is to break away from the old idea that only the chosen few, naturally endowed with strength, agility, and aggressiveness, are proper material for the "team." Once get the idea that every one, unless excluded for sound physical reasons, is a member of the team, and that the success of the team depends on the average standing attained by all its members, and you are practicing "Rational Athletics." The system that permits only the favored few to get the enjoyment and the benefits of athletic training is so unjust, unfair, and undemocratic, that we who have tried the other plan must be pardoned if, at times, we lose patience with those who fondly cling to the old plan, — those who, pointing to the trophies won by their "team," imagine they are doing their duty in the matter of physical training. If we could only make them understand that it requires no more, but rather less, time,

labor, and skill to train a whole school to a fair average of performance in a well balanced program of events, than it does to train a picked team of star athletes to a high degree of skill in a few events, for competition with other teams similarly trained! If we could only make them understand that, once organized on the basis of "Rational Athletics," the physical training period becomes a period looked forward to with joy; that no one asks to be "excused," if he can help it; that every one is distinctly "on the job," ready to help get out apparatus or do anything else, that no valuable time may be lost! This may sound like exaggeration, but it is plain fact which may be witnessed at any time by any one who cares enough about it to do so. As one teacher expressed it, "I can't make the girls *march* up to the 'gym'; they just *dance* up!"

It is a curious commentary on our sense of relative values, that whereas schoolmen agree that education is a threefold process, physical, mental, and moral, we have, in practice, relegated physical training to the grade of a very minor subject, along with music, draw-

ing, shop work and penmanship, allowing about five points out of a hundred to each in making up our record of progress. There are, however, already signs of a great awakening to the value, the importance, the necessity of greater attention to sound physical training for boys and girls as a preparation for the serious duties of life in whatever sphere they may move, for a keener enjoyment of life through participation in wholesome outdoor sports, and for the bitter struggle for personal and national existence that may come to us as suddenly and as terribly as it has recently come to the nations of Europe. From all these points of view there is nothing (except a better moral training than our system at present affords) that will pay richer dividends in our national life than a thorough physical training for all our boys and girls, and we maintain that this can be best accomplished through a properly regulated system of athletic competition on the principles here laid down.¹

¹ When the "Welsh Law" goes into full effect in New York State, in September, 1917, we shall add to our present program organized "hikes" for boys and girls, allowing additional credit for same.

II. THE ORGANIZATION OF THE PHYSICAL TRAINING PERIOD

THE course of study prepared by Dr. Crampton for the public schools of New York prescribes five different kinds of work for each lesson in physical training. They are:

1. **Introductory** — simple “warming up” movements to prepare the class for the real work;
2. **Corrective** — exercises designed to secure good posture;
3. **Educational** — exercises for training in form, precision, alertness, control, isolation, coördination, and inhibition;
4. **Hygienic** — vigorous work to exercise the muscles and stimulate the organs;
5. **Recreative** — folk dancing, games, athletics, for amusement and relaxation.

“New Rational Athletics” is simply an interpretation of the last two parts of the lesson. It consists in bringing vigorous ath-

letic exercises and the method of athletic competition into the regular physical training period. By this means, three very desirable things have been accomplished:

A. The formal work, rhythmic and response, is mastered more rapidly than ever before because the pupils are made to realize that this work must be done before they are allowed to go to their athletic work.

B. Each pupil, instead of a select few, gets the benefit of some real athletic work and learns the rudiments of several wholesome outdoor sports.

C. The physical training period becomes, in fact, a period of conscious training for a competition in which the pupils know they will be participants.

The physical training class should be divided into squads of from 6 to 8 pupils each. The best way to accomplish this is to have the class hold an election, choosing squad leaders by vote. The squad leaders, having been elected, should then choose the members of their squads as boys choose sides, each selecting one in turn. It makes some difference,

P. S. Term, 19....

*** Rational Athletics—Boys**

Record of Class Squad

<i>Classification:</i>									
<i>A, B, C, D, E</i>									
<i>Junior Senior</i>									
Running									
Hop, Step, and Leap									
Broad Jump									
High Jump									
Chinning									
Grip									
Shot Put									
Combination Dip									
Trunk Lifting									
Chest Expansion									
Pitching									
Basket Ball Goals									

Based on REILLY'S *New Rational Athletics For Boys and Girls*—D. C. HEATH & Co., Pub.

PLATE 1. — SQUAD LEADER'S CARD: BOYS

P.S. Term, 19

***Rational Athletics—Girls**

Record of	Class	Squad
<i>Classification</i> <i>A, B, C, D, E.</i> <i>Junior Senior</i>		
Running		
Grip		
Chest Expansion		
Basket Ball Throw		
Pitching		
Basket Ball Goals		
Serving in Tennis		
Putting in Golf		
Driving in Golf		

Based on REILLY'S *New Rational Athletics for Boys and Girls* D. C. HEATH & CO., Publishers

PLATE 2. — SQUAD LEADER'S CARD: GIRLS

as noted elsewhere, whether the competition is in athletics alone or in scholarship and athletics; that is, it makes some difference in the order in which the leaders select the members of their squads. The final composition of the squads is, of course, very much the same in either case.

It is well for the teacher not to interfere in this election. Let the children choose their own leaders; they know one another better than he knows them. When a leader proves incompetent, it is time for the teacher to suggest to that squad that they hold a new election. They will usually act upon such a hint.

The squad being thus organized, the leaders should be furnished with some sort of form for keeping a record of the achievements of their respective squads. Let us say here, however, that the important thing is not the keeping of records. The squad leader's business is to prevent and stop "fooling" and to keep his squad working. It is well, therefore, for him to record frequently what his boys are doing. The teacher should look these records over, occasionally, but where

he has confidence in the skill and honesty of the leaders, he may accept their records of most events as official. This should be done sparingly, however, and in no case should the final rating depend solely on records made by a pupil. We have found that a set of cards, arranged as shown in Plates Nos. 1 and 2, serve this purpose very well.

At the end of the month the teacher writes up the record of each pupil in the Chart which hangs on the classroom wall for all to see (*Plates 3 and 4*). Some judgment is necessary in giving credit for the month's work. In exercises in which the element of chance enters largely, as in Goal Shooting, the pupil is given credit for the best record he has *duplicated* during the month. In other exercises, he is given credit for his best performance, unless his best mark is very much higher than his average. In such a case the teacher will test him during a regular period. Our program is arranged so that the teacher of physical training has a few free periods, during which he writes up his records. It means some additional clerical work; but the teachers who have been doing it for several

18 NEW RATIONAL ATHLETICS

years past are unanimous in saying that it pays.

In our classes we have two forty-minute periods a week for physical training. Each lesson begins with the formal work, rhythmic and response, prescribed by the course of study under the heads, (1) Introductory, (2) Corrective, and (3) Educational. The amount of time devoted to this work depends upon the promptness with which the class masters the work laid down by the visiting special teacher. We have found that the very general desire to get at the athletics has helped considerably in securing close attention, in order that this part of the lesson may be gotten through with as soon as possible. The squad formation may be used to advantage here also, the squads first mastering the lesson being released where practicable to practice some athletic exercise that will not interfere with the formation of the rest of the class. In this connection we find, too, that forming an "awkward squad" of those boys whose habitual posture is bad, and excluding its members for a time from the athletic work, has a very good effect.

There should be as many "positions" on the floor as there are squads in the class. With six squads, there should, if possible, be six different activities for them to enter into.

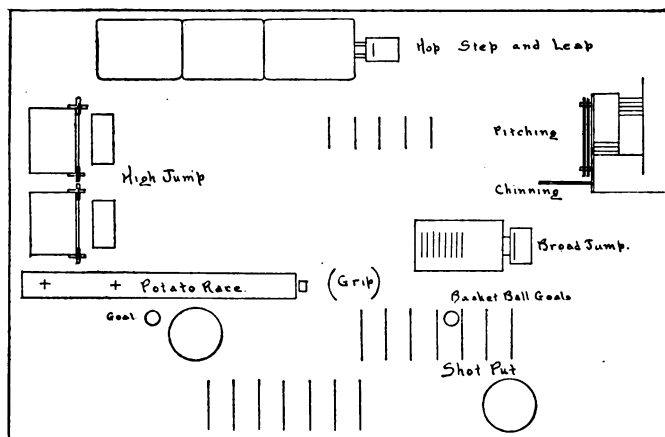


PLATE 5. — FLOOR PLAN: BOYS

With our full program for boys (12 events) in operation, we arrange as follows:

Chest Expansion is taken in the Setting Up Drill in the classrooms and, also, at the beginning of the formal lessons. Once in two weeks, a sheet of oak tag or wrapping paper is laid on the floor by each pupil in the entire class, and the Combination Dip and

Trunk Lifting are practiced as a class exercise. (*See illustrations, pages 55 to 59.*) The Grip exercise is taken after they have finished the Potato Race, this latter event, naturally, being run off very quickly. While the boys (and girls) are standing waiting for their next event, they amuse themselves with the Grip exercisers. (*See illustrations, p. 45.*)

This still leaves eight events which, for a class of six squads, we arrange in an alternating program, as follows:

First Lesson

1. Hop, Step, and Leap
2. Pitching
3. Broad Jump
4. Shot Put
5. Potato Race
6. High Jump

Second Lesson

1. Hop, Step, and Leap
2. Chinning
3. Broad Jump
4. Basket Ball Goals
5. Potato Race
6. High Jump

The reason for the change in 2 and 4 is, first, that our Pitching Target hangs near the Chinning Bar so that we cannot have the two events going on at once; second, the Shot Put and Basket Ball Goals take up so

much space that we cannot very well have both of them going on at once. In any case the selection and arrangement of events must of course be governed largely by the space available. (*See Plate No. 5 for diagram of floor arrangement for boys.*)

The girls' classes are organized in exactly the same manner as the boys'. With girls, practice in Chest Expansion is taken care of in the same way; that is, both in the classroom and at the beginning of the physical training lesson. The Grip exercise is practiced after the Running, also.

This still leaves seven events. Where space allows, it is best to have all seven in operation, allowing one squad to take two events if possible in the given time.

The size and shape of the room and the position of wall spaces will to a large extent necessarily determine the positions on the floor for the various exercises. But the nature of the exercises should alone determine the *order* in which they are taken up. Even if squads have to crisscross and march about a little, they should not be sent immediately to an exercise that uses the same

set of muscles as in the one just finished. Arm and leg exercises should be alternated as much as possible. For instance, compare the two following orders of exercise: *

<i>Good Sequence</i>	<i>Poor Sequence</i>
1. Running	1. Running
2. Pitching	2. Broad Jump
3. Broad Jump	3. High Jump
4. Hop, Step, and Leap	4. Hop, Step, and Leap
5. Shot Put	5. Pitching
6. High Jump	6. Shot Put

Referring again to the diagram of our floor arrangement for boys, Plate No. 5, it will be seen at a glance that a squad starting at any one of these positions and moving on in a circle to the succeeding ones will in all but one instance alternate arm and leg exercises. In the girls' program (*see, Plate No. 6*) we cannot make quite so good an arrangement, because most of the girls' events are arm and trunk exercises. This is not an accident. Any one who watches girls play will realize that "tag," "ring-a-rosey," rope-skipping, dancing, etc., afford plenty of exer-

cise for the legs, but not much for the arms and very little for the trunk. Consequently, in selecting and inventing exercises for girls, we looked for events that would involve bend-

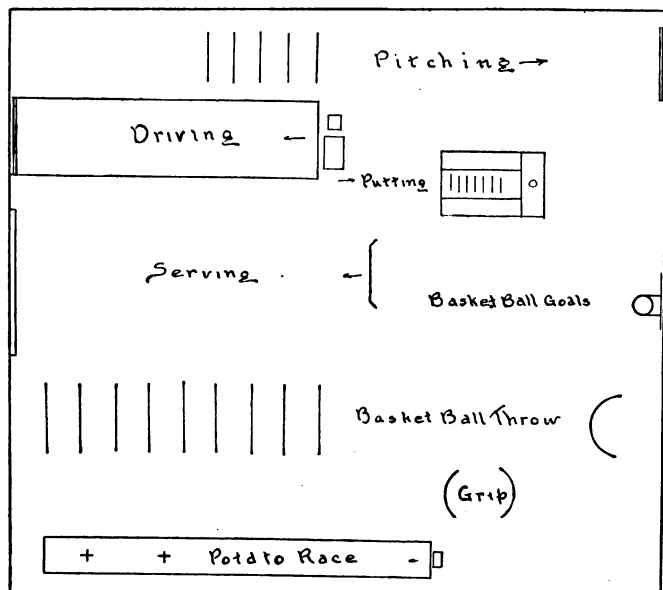


PLATE 6. — FLOOR PLAN: GIRLS

ing and twisting of the body, swinging the arms, and *throwing things*. Any one who will conscientiously spend a few minutes on each of the girls' exercises will probably

realize by a queer feeling about the abdomen that some muscles there, which are generally much neglected, have been given some strenuous and unusual work to do.

The formal work being finished, the signal to "form squads" is given, — if the squad formation is not already in use in the class work. Squads being formed, the order is given "*To Positions, March!*" Let us say that Squad 1 goes to the starting line for the Hop, Step, and Leap; Squad 2, to position for Pitching or Chinning; Squad 3, to the Broad Jump; Squad 4, to position for Shot Put or Goals; Squad 5, to Potato Race; and Squad 6, to the High Jump.

A little formality in lining up, marching in good order, halting at command, beginning and stopping work promptly on signal, is very desirable. The blowing of a whistle should be the signal for everybody to stop instantly whatever they are doing. Boys and girls should be trained to obey that signal absolutely; and it should be used exclusively by the teacher as an order to "Stop and Listen."

The squads being lined up in position, the order, "*Begin!*" is given and they start practicing, each squad under the direction of its leader. Within three or four minutes each member of the various squads will probably have had his turn, possibly two or three turns, depending on the exercise. The teacher then blows the whistle; all stop where they are; the order "*Fall In!*" or "*Form Lines!*" is given; then "*To Positions, March!*" and the squads march in line to the next position, marking time till the order "*Squads, Halt!*" is given. Again the order to begin is given and they go at the exercise. There is so much freedom allowed in the exercises themselves that this tightening up and formality in making the changes from one position to another is very effective, and, in our judgment, it should very rarely be relaxed.

In case the end of the period comes before all the squads have had a chance at all the exercises, the squad leaders should make note of where they stopped, and at the next lesson they should begin at that point. It is a good idea to post a list of the exercises, numbered in the order in which they should

be taken up. After a few weeks the sequence becomes practically automatic.

Reliable boys and girls should be put in charge of the apparatus. They should go directly to the gymnasium or playground and get things in position so far as is possible without interfering with the floor space necessary for mass work. At the end of the lesson sufficient time must also be allowed for putting things away.

In work of the kind we are doing, rubber-soled shoes are almost a necessity for good performance and for safety. The teacher should, therefore, insist, as far as possible, on rubber-soled shoes. Being excluded from the exercises, occasionally, has a good effect on boys and girls who forget to bring their shoes. Girls should, of course, wear bloomers.

III. TEACHING THE EXERCISES

It does not require specially trained teachers or experienced athletes to introduce Rational Athletics. The one thing needful is a real live interest in boys and girls, — given that, all “the rest will be added unto you.” The experienced athlete will probably skip this chapter. For the benefit of those less expert and less self-confident, we have set down here, in some detail, suggestions as to how to teach the various exercises, and how to test performance — suggestions which we believe will be welcomed and found profitable by most teachers.

Let us state in beginning, that while children may get more fun out of going at things in their own haphazard way, it pays, in the long run, to work for and insist upon “good form.” There are usually several wrong ways and only one right way of doing anything, and human nature is so constituted that we almost invariably go about doing things the

wrong way first. So true is this that we have found that it pays to spend many weeks teaching the form of various events as mimetic exercises with the whole class, before allowing them to be actually tried as events. As in anything else started wrong, it is hard to correct the wrong method. While teaching the form of the exercise to the class as a whole, the teacher should select the pupils who first master it or who know it already, and have them act as leaders, standing in front of the class as models, and acting as assistant instructors when the event is actually taken up with the apparatus.

Naturally, the teacher who has charge of the class in which these exercises are first introduced will have the heaviest task. Once the exercises are learned, however, the teacher's work, under this system, becomes the lightest ever known. What makes a teacher's work difficult is the need of holding the attention of children on tasks not in themselves interesting, and the supplying of "steam," — the stimulus that keeps the class alive and doing. In the physical training period organized under this system, the children them-

selves take care of all that, the teacher's task becoming that of general supervision or the correction of bad form here and there.

RUNNING

1. **Potato Race.**— Our original layout for the Potato Race consisted of four blocks placed eight feet apart, the farthest being 50 feet from the starting line or basket. In placing the four blocks successively on the marks, or in bringing them in one by one, the runner covered a distance of 304 feet, approximately 100 yards. We found, however, that when it came to a comparison of individual records, the runner who brought the blocks in and dropped them in the basket had an advantage over the runner who must pick them out of the basket and put them on the marks.

In order to make the conditions absolutely the same for all, we did away with the first and fourth blocks, leaving the second and third, which are respectively 34 feet and 42 feet from the basket. The runner now starts from the basket, brings in one block and

drops it in the basket; he brings in the second and *touches* the basket; replaces on the mark the second block, gets the first out of the basket and replaces that on the mark and returns, — his time being taken as he crosses the line. In case a block does not fall into the basket, the runner is not required to return and pick it up; he is, however, charged one second on his time, for a “foul.” In this way every runner does exactly the same thing, covers exactly the same ground, and the comparison of individual time is therefore fair.

For the Junior Division, the starting line with the basket is 10 feet nearer the first block, the distances being respectively 24 feet and 32 feet. Running each of these four times makes 224 feet, or a little over 70 yards. All these marks are painted on the floor of the gymnasium and playground.

Rubber-soled shoes are practically necessary in order to make good time in this event.

The Potato Race is a splendid exercise. It is keenly exciting, and develops both speed and control. The effort of stooping to pick

up the blocks exercises the big muscles of back and thigh, squeezes the viscera, compels deep breathing, and certainly stimulates the circulation. When all these results are se-



PLATE 7. — THE POTATO RACE

cured in an atmosphere of keen enjoyment, we are getting nearly 100 per cent. of physical training value.

Runners should learn not to overrun the marks. The trick is to stop short of the

mark and, while stopping, reach for the block or the basket. Every foot saved counts.

2. **Sprints.**—“Class Running,” according to the method prescribed by the P. S. A. L., is conducted as follows:

The class is lined up back of the starting line, the teacher standing at the finish line, watch in hand. The teacher gives the signal to start by snapping his handkerchief and the first boy starts. As he crosses the finish line, the teacher snaps his handkerchief again and the second boy starts, and so on. The teacher takes the total elapsed time from the instant the first runner starts until the last one has finished and, dividing by the number competing, gets the average time for the class.

When it is desired to time each individual, a stop watch is very convenient, in fact almost necessary. When individual time is taken, the signal for the second runner to start is given only when the time of the first has been taken and recorded. For this purpose the teacher should have at his elbow a non-competing pupil to act as clerk. One great advantage of using a stop watch is

that, in addition to its much greater accuracy, the teacher can have his eyes on the runner rather than on the watch.



PLATE 8. — CROUCH START

One of the mistakes that we are prone to make is to suppose that boys and girls know how to run. A little watching will convince one that they need to be taught how to do this as much as anything else.

For the guidance of those who have not had training in sprint races, we have set down here seven points to be observed in running:

1. Make a quick start. Practice the crouch position. (*See Plate No. 8.*)

2. Dig the ground out from under you with half a dozen quick, choppy steps.

3. Having thus gotten up some speed, straighten up and *begin to run*.

4. Make your stride as long as you can without disturbing your balance; every inch added to your stride counts up wonderfully.

5. Keep your head up and look straight before you.

6. Keep your arms and legs moving straight forward and back, like the driving rods of a locomotive. Any swaying from side to side is lost motion.

7. Make yourself go faster and faster, flashing across the finish line at your highest possible speed.

Any teacher who will closely observe his class with these points in mind can tell each pupil what is wrong with his running, just as

surely as any professional trainer. He will see boys using a crouch start deliberately *stand up* and then begin to run, thus losing all the advantage of the crouch.

Any one who has seen fast skaters racing has noticed the queer little steps with which they start digging their skates into the ice to get action before they straighten out and begin to skate. Sprinters must get that same idea of kicking the ground out from under them with half a dozen choppy steps as they spring forward from the crouch start. Then it is time to straighten up, and not before. One of the hardest faults to overcome is the persistent tendency to slow up when approaching the finish line. It is well to place some one about 30 feet beyond the finish line and to instruct your runners not to slow up till they have passed that person. Do not allow a crowd to gather around the finish line, as that increases the tendency to slow up.

HOP, STEP, AND LEAP

One is likely to assume that boys know how to do this exercise. As a matter of fact,

comparatively few do, and it must, therefore, be analyzed and taught in advance as a class exercise.

Draw on the floor two parallel lines about four feet apart. Tell the class that the space between the two lines is a stream of water. Have them run in column around the floor and *hop* over the stream. Then have them *step* over it, on the run; then jump over it, still running. Then have them do a hop and a step; a step and a jump; and, finally, the three together.

There will usually be a few who will have difficulty in mastering the sequence. They must also be trained to gauge their preparatory run so as to strike the starting line with the foot they want to spring from. Assuming that this is the *right* foot, the boy must strike just back of the starting line with his right foot and make his spring, landing on his right foot again — which is a *hop* — springing again immediately and landing on his *left* — which is a *step* — finally landing on both feet — which is a *jump*. To fall or step back at the finish of this exercise constitutes a foul.

The general tendency is to overdo it at the start by trying to make so much on the hop that the pupil loses control and has not spring enough in him for the step or the final effort in the jump.

Several gymnasium mats measuring well over 30 feet must be provided. In front of the first mat we place a board on which is tacked a broad piece of corrugated rubber with a white line painted across it. This is the starting line. The near edge of the board is bevelled down so as to avoid the danger of tripping. The corrugated rubber should measure about 2 feet square, and is to prevent slipping in the take-off.

BROAD JUMP

To secure good form in the Broad Jump is comparatively simple. Boys should be trained to take one upward stretch, balancing an instant on their toes, gather themselves together, arms extended back, and then to spring forward and upward with all the power of their legs, flinging the arms forward at the same time. The hardest thing to

get them to understand is that, to get distance, they must jump high. A projectile fired at an angle of 45 degrees travels farther than one fired higher or lower. We have



PLATE 10. — BROAD JUMP: CORRECT LANDING

found it useful to stand a twelve-inch board on edge about 2 feet from the starting line, so as to make the pupils jump high. They must learn, also, that to fall or step back after landing constitutes a foul. (*See Plates Nos. 9 [page 49] and 10.*)

Attention is invited to our arrangement of the mat for jumping. (*See Plate No. 9.*) Attached to one end of a regular ten-foot

gymnasium mat is a platform about 18 inches square. This is not a springboard, but simply a solid platform of two thicknesses of seven-eighths-inch board, covered with a square of ordinary rubber stair-tread. This gives the jumper a solid, non-slipping platform, about on a level with the mat. He is not allowed to use the edge of this board as a *take-off*, but must jump from a line marked on the rubber.

Measuring from the starting line, cross-lines are painted three inches apart on the mat, beginning with 4 feet 6 inches, the minimum for a "Junior A." In this way it is not necessary to measure every jump, as the jumper is credited with the distance of the last line which he cleared. To make it easy to convert the distance into "points," we use a stick with cross lines three inches apart, marked 5, 7, 9, 11, 13, 15. The line marked 5 is placed alongside of the line on the mat that measures the minimum distance for the given classification. By this device of a movable bar, the person in charge can tell at a glance just how many points each jumper earns.

HIGH JUMP

For practice in the High Jump we provide two jumping stands, one set low for the little fellows and one set for those who can jump higher. The squad breaks up automatically, each boy going to the bar that is placed at the height that suits him. A regular gymnasium mat is placed behind each bar for the boys to land on, and a square yard of corrugated rubber is placed in front, from which they can "take off" without danger of slipping.

There are two general methods commonly used in the High Jump. The one is the side jump, in which the jumper approaches the bar from the right or the left and goes over sideways. This seems to be the natural way for boys to begin. The other is the straight jump, in which the jumper approaches the bar at right angles and shoots over feet first, the body being in an almost horizontal position. The form of the straight jump is quite difficult to master, but we believe it is worth while trying to acquire it. Authorities, how-

ever, differ. The straight jump is done as follows:

Taking off, say, with the right foot, the left leg is thrown high and straight to the front, the right foot being then snapped over in front of the left knee, the body clearing the bar, feet first, in an almost horizontal position. It should be noted that this method necessitates raising the weight of the trunk only a foot or so, while the side jump requires lifting the body high enough to practically *sit up* on the bar.

Four things must be observed by the boy who would master the straight jump:

1. Not to run too far or too fast; to save his strength for the spring.

2. To take off far enough from the bar to bring the left leg up straight, without kicking the bar.

3. To snap the right leg over *in front* of the left, not *behind* it.

4. Not to try for height until he has mastered the form, which may require weeks of practice.

CHINNING THE BAR

Chinning Bars have been put up in the doorway of every classroom, from 5A up. Boys are encouraged to take every opportunity before, during, and between sessions, to practice chinning. At ten, eleven, and two o'clock the gongs ring, whereupon each class stops work, rises, opens the windows, and does the "Two Minute Drill," the setting up exercise prescribed by the course of study. One squad may be allowed to practice chinning at each of these times. Individuals who have finished a piece of work and who are waiting for the rest of the class would be better employed practicing chinning than in looking about seeking whom they may annoy.

A visitor timed a boy one day, finding that he left his seat, which was in the middle of the room, went to the door, chinned the bar thirteen times, returned to his seat and resumed his work in forty-three seconds. It acts as a stimulus to work when the boys know they may practice chinning if they finish their task before the others.



PLATE 11. — CHINNING:
GOOD FORM



PLATE 12. — CHINNING:
BAD FORM

In chinning, the boy must first hang from the bar, arms and legs straight, then pull himself up so that his chin is just over the bar. It must be a dead pull-up, no snap, swing, or kick being allowed. Boys who are unable to pull themselves up at all should practice hanging from the bar and, if possible, rope climbing. (*See Plates Nos. 11 and 12.*)

GRIP

For exercise in strengthening the grip, we use a device consisting of two wooden handles joined at one end by a spiral spring. These come in several degrees of strength and can be bought for 25 cents the pair, — two sets, one for each hand, being a pair. We have three or four of these hanging on the walls of every classroom and several more among the apparatus in charge of the teachers of physical training. Boys and girls are encouraged to take every opportunity to practice with these spring grips, so that when they are tested on the official recording instrument, they may show an improvement over their previous record and so gain a few more points. (*See Plates No. 13 and 14.*)

That is the secret of the success of this system both with boys and with girls. They are working always for something definite. They are trying to beat the other fellow and they are trying to beat their own past performance. And there is no guessing about it. Everything is exact, definite, and absolutely fair. Children do not work for some

indefinite, far-off good. They work for tangible results here and now, and this sys-



PLATE 13. — GRIP EXERCISER



PLATE 14. — GRIP TESTING

tem gives them this definite something to work for.

As stated in a previous chapter, boys and girls also practice with the grip exercisers when they have done their turn at the Potato Race and are waiting for their next event.

SHOT PUT

This is one of the finest and most interesting exercises we have for boys. We wish it were possible to give them a real shot to put, as there are points about the form that can be taught only with the shot. But with large numbers it is impossible to use even the so-called "in-door shot." We have substituted a 6-pound medicine ball, on the side of which the makers have sewed a leather pocket into which the boy slips his fingers. This prevents the ball bouncing out of his hand when he takes the preparatory skip. Two or, better, three medicine balls should be provided. Two lines painted on the floor, seven feet apart, indicate the "circle." Beginning at 16 feet from the start, lines are painted on the floor to mark the *minimums*, 16, 18, 20, 23, 26; and then every two feet up to about 40 feet. Thus the squad leader can see at a glance how many feet each boy has "put." Toward the other end of the floor and a little to one side is another "circle" and a set of measuring lines running in the opposite direction.

Two groups can thus engage in putting the shot at the same time. Group one (half of



PLATE 15. — SHOT PUT: FIRST POSITION

a squad) puts down on one side; the ball is stopped and rolled over to one of the second group, who puts it back on the other side.

So two or three balls are kept circulating and no time is lost sending them back to the starting line.

In putting the shot, the boy stands with his right foot on the rear one of the two lines indicating the seven-foot "circle," with the ball balanced on his right hand at his shoulder. (*See Plate No. 15.*) From a crouching position, weight entirely on the right leg, he takes a skip forward and then, as quick as a flash, he twists in the air, landing with his right foot just back of the front line and facing in the opposite direction to that faced at starting. As he twists in the air, he shoots his hand out and up, straight from his shoulder, "putting" the shot as far out as he possibly can. In this exercise also he should remember that a projectile fired at 45 degrees travels farthest. (*See Plate No. 16.*)

Two mistakes are common in putting:

1. Pausing after taking the skip and before doing the twist. This loses all the advantage gained from the skip.

2. "Slinging" the ball, with arm extended, instead of "putting" or pushing it straight out from the shoulder. (*See Plate No. 17.*)



PLATE 9.—BROAD JUMP: READY
(See pages 38-39.)

The former is an application of the catapult or sling, while "Putting" is more like releasing a spiral spring that shoots straight forward.



PLATE 16. — SHOT PUT: SECOND POSITION

ward. If the boy will think of himself as a big spring, gather himself together in a crouching position and suddenly twist and



PLATE 17. — SHOT PUT: BAD FORM

straighten out from his toes to his finger tips, he will master the shot put. To step or fall forward over the line constitutes a foul.



PLATE 18. — PITCHING TARGET

PITCHING

On one side of the indoor playground where there are no windows to be broken we have two pieces of sail cloth 6 feet wide and 9 feet long, hanging one in front of the other with about 12 inches space between. In the front piece, an opening 15 inches wide and 24 inches high is cut, to represent the space over

the plate, between the average boy's knee and shoulder, in which a ball must be placed to be called a "strike." (*See Plate No. 18.*)

We do not pretend by this device to teach "pitching," — an art which consists in misleading a batter by mixing curves, fast and slow balls. We claim only to train in the elementary quality of control, in the ability to throw a ball straight, to put it where it ought to go. We allow 5 balls; if the 5 go through the opening, the pitcher makes a perfect score. But the balls must be thrown with some speed, not merely tossed in. In an official test each boy is given three balls to "warm up" before beginning to score.

BASKET BALL GOALS

In this exercise the only element is time. The boy or girl gets the ball for the number of seconds allowed for his group, and no one else must touch the ball during that time. He shoots as often as he can, recovers the ball and shoots again from any position he chooses. Scores of twelve and even fourteen goals in thirty seconds have been made repeatedly by both boys and girls.

COMBINATION DIP

The Combination Dip is one of the best of all-around exercises. It brings into play the arms, shoulders, back, loins, and legs. Care should be taken to keep the hips high and the back flat, avoiding the "sway-back" position. (*See Plates 19 to 24.*) It is done as follows:

1. Place hands on floor the width of the shoulders apart, and assume a crouching position.

2. Stretch the legs straight back, resting the weight on the hands and toes.

3. Bend the arms until the chest — not the abdomen or knees — touches, or nearly touches the floor.

4. Straighten the arms.

5. Dip again.

6. Straighten the arms again.

7. Bring up the feet to the crouching position, as in 1.

8. Stand erect.

- 9-10. Rest.

1. Begin again, repeating the 10 counts.



PLATE 19. — COMBINATION DIP: TAKING PLACES



PLATE 20. — COMBINATION DIP: READY

The ten counts constitute one Combination Dip. When the boys have mastered the details, the leader should count at a uniform



PLATE 21. — COMBINATION DIP: FIRST COUNT



PLATE 22. — COMBINATION DIP: SECOND COUNT

rate of about forty to the minute, emphasizing the odd numbers.

In practicing this and Trunk Lifting, as a class exercise, sheets of oak tag or wrapping paper should be spread on the floor as shown



PLATE 23. — COMBINATION DIP: THIRD COUNT

in Plates 19–23. In testing, we use wooden frames, consisting of two handles nailed to



PLATE 24. — TESTING THE COMBINATION DIP

crosspieces, about the width of a boy's shoulders apart. Testing the Combination Dip may be made more definite by the simple expedient of placing on this frame a regular platform bell, which the boy must ring by pressing on it with his chest at each dip. (*See Plate 24.*)

TRUNK LIFTING

Trunk Lifting consists in lying flat on the back, arms folded across the chest, and then



PLATE 25. — TRUNK LIFTING: FIRST POSITION

raising one's self to a sitting position without any assistance whatever from the arms.

This is an exercise that strengthens the abdominal muscles supporting the viscera, and it is very valuable as it takes care of a much neglected set of muscles. It seems difficult, almost impossible, at first; but practice makes



PLATE 26. — TRUNK LIFTING: SECOND POSITION

perfect, and the flexibility it produces repays the effort of mastering it. We recommend this and the Combination Dip to adults who show a tendency to stiffness or undue corpulence.

In practice, one half of the class holds down the feet of the other half. The arms are folded across the chest, the back is arched, and the head held erect. In this way good

posture is maintained, while at the same time the muscles of the abdomen and upper legs are given some strenuous exercise. (*See Plates 25-26.*)

CHEST EXPANSION

As previously explained, exercise in deep breathing is taken during the Two Minute



PLATE 27. — TESTING CHEST EXPANSION

Drill in the classroom and at the beginning of the physical training lesson, before the dust is stirred up.

In testing, the tape is drawn around the

chest *below* the shoulder blades and below the pectoral muscles, at right angles to the spine, on what is called the "ninth rib." (*See Plate 27.*) This does away with spreading the shoulder blades and contracting the chest muscles which have nothing to do with inflating and expanding the lungs.

BASEBALL THROWING OR PITCHING, FOR GIRLS

The target for girls consists of heavy canvas 6 feet by 9 feet, like the one for the boys. Painted on it is a series of three rings, the middle one, or "bull's-eye," being 20 inches in diameter; the outer rings being 10 inches wide all around. In the bull's-eye is painted a "5"; in the first ring, a "3"; in the second ring, a "2"; outside the rings, but on the canvas, counts 1. (*See Plate 28.*)

Girls naturally throw a ball from the elbow. It is hard to get them to swing the arm and throw from the shoulder. Practicing a full circle forward, and a small circle back of the head with an Indian club will help them to get the idea of the full arm movement necessary in throwing a ball.

The player should stand with the left foot forward at the line marked on the floor for her group, the weight thrown back, the right

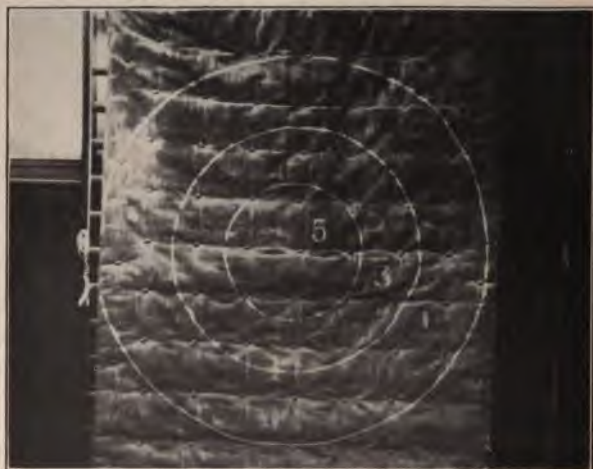


PLATE 28. — TARGET FOR BASEBALL THROWING

leg bent; then swing the arm down and back at full length, execute a small circle back of her head, and shoot the ball straight forward, throwing the weight forward upon the left leg. This should be taken with the class as a mimetic exercise until they get the swing of it.

Five balls are thrown in practice. In test-

ing, three are allowed for "warming up" before scoring.

SERVING IN TENNIS

Here, again, we are not really teaching the art of serving, which, as in pitching, consists in misleading one's opponent. We are



PLATE 29.—SERVING IN TENNIS: THE NET

simply training in the very elementary thing of placing a tennis ball in a given space. And one who watches a class of beginners will realize that even this is quite a contract.

Form should be insisted upon, to a certain extent at least. The player should be obliged

to grasp the racket near the end of the handle and to swing at the ball thrown well above



PLATE 30. — SERVING IN TENNIS: 1

the head. Lobbing, or pushing the ball with the racket grasped midway of the handle, should not be allowed. (*See Plates 29-31.*)

A broad line is painted on the floor 39 feet from the wall; smaller lines three feet apart indicate the positions at which the different



PLATE 31. — SERVING IN TENNIS: 2

groups stand when serving. Five balls are allowed each server. In an official test, three balls are allowed for practice.

BASKET BALL THROW (*for Distance*)

Throwing the Basket Ball corresponds, for girls, to the Shot Put, for boys; but with the distinction that the girls *sling* the ball,

holding it balanced on the hand at full arm's length. Standing in a 6-foot circle, left foot advanced, weight on right leg, right knee



PLATE 32. — BASKET BALL THROW: 1

bent, ball resting on hand and forearm, the player suddenly swings around, pivoting on the left foot, throwing the weight forward, and slings the ball forward and upward with

all her force. The distance covered by the ball depends on the angle at which the ball



PLATE 33. — BASKET BALL THROW: 2

is thrown and the speed with which the girl swings around. As in the Shot Put, to step or fall forward out of the circle constitutes a foul. (*See Plates 32-33.*)

PUTTING IN GOLF

An authority on golf says that 75 per cent. of the shots in a game are played on the



PLATE 34. — PUTTING IN GOLF

putting green. Supposing they were only 50 per cent., the importance of this part of the game is evident; yet among players in gen-

eral, practice in this element is very much neglected.

Putting requires care and concentration. It is a serious breach of etiquette, on the links, to speak or to move when another is about to drive or put. This should be impressed upon the girls and should become a habit with them when practicing these shots.

Putting consists of "sweeping" the ball into the hole. The "putter" should be held so that the face of it is at right angles to the line leading to the hole. It should be drawn back a little way and then *swept* forward straight toward the hole, keeping the face of the club always at right angles to the line. Having sighted the hole and got your club in position, the one thing to do is to "keep your eye on the ball." Remember that this is the first and last commandment in playing golf. (*See Plate 34.*)

DRIVING IN GOLF

This is perhaps the most difficult exercise of all to master. To drive perfectly, one must learn to hold the club so that the face of it strikes the ball at right angles to the



PLATE 35.—ADDRESSING THE
BALL



PLATE 36.—AT THE TOP OF
THE SWING



PLATE 37.—AT THE END OF
THE SWING



PLATE 38.—BAD FORM

line of direction, as in putting. One must learn to swing the head of the club through a perfect arc, "following through" after



PLATE 39. — DRIVING IN GOLF: THE CAGE
CLOSED

hitting the ball, to avoid "pulling" or "slicing." One must learn to keep one's head always in the same relative position to the ball, at all points of the swing. This is not

as easy as it seems. And, above all, learn to "keep your eye on the ball!"

The natural tendency is to look up to see where the ball is going. But one must learn



PLATE 40.—DRIVING IN GOLF: THE CAGE IN USE

to trust in Providence and look for the ball only after the swing is complete. "Keep your eye on the ball" means keep your eye on the spot where the ball is (or was) until you have finished your swing. (*See Plates 35-38.*)

We place the ball on a thick jute door-

mat which acts very much like a good piece of turf. The player stands on a platform 3 feet square, of $\frac{7}{8}$ -inch board covered with rubber. The one thing to guard against is the danger of other girls getting behind the player. A golf player is like a mule in that the only safe place is in front of him. To make it impossible for any one to be struck by the swinging club, we place an ordinary clothes-horse back of the player, leaving only one entrance to the cage open. The squad leaders are instructed to allow only one player to enter the cage at any one time. When the player has driven the number of balls allowed her, she must collect them, put them in a tray alongside the mat, and *then* hand the driver to the next player. (*See Plates 39-40.*)

IV. THE CLASS ATHLETICS SYSTEM

RATIONAL ATHLETICS is based on, and was originally developed from, the system of "Class Athletics" conducted by the Public Schools Athletic League. In 1910 we began experimenting in an effort to extend and improve this system. In 1911, the Board of Education published an illustrated pamphlet describing the work in "general athletics" then being done in P. S. 2, and advocating its adoption in all the schools. Nothing was done, however, so we went on developing our ideas in our own school, regardless of whether or not others followed our example.

We still believe that "Class Athletics" can be made a wonderful agency for good, and we have here set down briefly certain suggestions which we have, from time to time, offered for the extension and development of the system.

Competitions in "Class Athletics" are con-

ducted by the P. S. A. L. every year at stated times; contests in Standing Broad Jump being held in the Fall; in Chinning the Bar, in the Winter; and in Running (sprints), in the Spring. Each school does its own training, conducts its own tests, and sends a report to the League stating the average performance of 80 per cent. of the register of its best class in each year (5th to 8th) in the event called for at that time. The reports of the various competing schools are compared, and an official of the League visits those schools claiming the highest averages. If, in the official test, the record of the class claiming the highest average equals or exceeds the record previously sent in, that class is declared the winner. If it falls below, a class in the school which claimed the next highest average is tested, and so on, the one getting the highest average on the official test being declared the winner.

While using practically the same method, Rational Athletics introduces four decided changes, all of which we believe are improvements:

First: As conducted by the League, one

class in *each school year* is tested, — four in all. We make the competition between classes in the same grade or half year, thus making eight grades in all, 5A to 8B (first half of the Fifth Year, to and including the second half of the Eighth Year). By the former method the A classes (first half of each year) are competing with B classes (second half of same year), that is, with boys six months older who have six months' more training. Naturally, therefore, the B classes have the advantage. We make the competition between classes of the same grade, thus giving the A classes an equal chance to win a trophy.

Second: As conducted by the League, one class in each year is selected, trained, and tested. Now there may be five, there may be twenty, classes in the same year in a given school. These other classes may, and frequently do, take little or no part in the training. Moreover, it is quite possible to make up classes in such a way as to put all the best athletes *in one class*. Naturally, that class would be most likely to win the trophy. We avoid both of these objectionable points by basing the competition on 80 per cent. of

the register of *all* the classes in the same grade, no matter how few or how many there may be. Reports are sent in for *each* class; each class is trained and keeps on training. When the official test is to be made, *one class* in each grade is *selected by lot* under the direction of the official tester. Consequently all the classes have to be ready and no advantage is gained by "framing up" a class of athletes.

Third: As conducted by the League, boys taking part in class athletics concentrate on one exercise for two or three months; for example, on Broad Jumping from September to December; Chinning from December to March; Running from March to June.

We felt that this was a rather meager program and that it was open to objection because it led to boys specializing in one thing for three months, exercising only one set of muscles, and then dropping that exercise until next year. We, therefore, began to extend the program by adding one exercise each season; for example:

Fall: Broad Jump and Combination Dip;

Winter: Chinning and Hop, Step, and Leap;

Spring: Running and Trunk Lifting.

A little consideration of the above list will show that the exercises are grouped so as to bring into play different sets of muscles and that, taken altogether, they at least approach a well-balanced scheme.

Fourth: As conducted by the League, Class Athletics contests occur three times a year, — once in the Fall Term and twice in the Spring Term. We felt that this was once too often; that the plan did not adapt itself very well to our two-term school year. So we finally dropped one contest and extended our program still farther until it included twelve exercises for boys and nine for girls, from which neighboring schools may select, say, three, — the contests to be held about the end of the fourth month of each term.

To sum up, briefly, the system of Rational Athletics offers, in place of Class Athletics as conducted by the P. S. A. L., the following:

1. Contests between classes of the same grade only.

2. Eighty per cent. of the register of *all* the classes in that grade as contestants; the classes which are to be tested to be selected by lot at the time the test occurs.

3. Contests to consist of three exercises, to be selected and agreed upon at the beginning of the term.

4. Contests to take place once only in each term, as near the end as possible without interfering with examinations, etc.

Two neighboring schools could easily conduct a dual meet on a Field Day, by agreeing in advance on a set of exercises, by putting in the field 80 per cent. of their boys, and by awarding the victory to the school winning the majority of the events. Properly organized and managed, the boys of two good-sized schools can be put through a set of, say, three events, in a little over two hours.

In this, the simplest form of Rational Athletics, there is no point system, no minimum standard, no individual classification. A limit is put to Chinning, Combination Dip, Trunk Lifting and Deep Breathing, as we do not consider it desirable to carry any one of these exercises too far. With these exceptions, the result is determined by adding the actual performance of 80 per cent. of the register and dividing by the number competing, to get the average. This kind of athletics

is, after all, the only kind that is really worth while, since it reaches the great majority and brings all the benefits of athletic competition to those who need it most.

We recommend the following program, which introduces only two new exercises, the apparatus for which is easily obtainable if not already on hand:

Boys

<i>Fall Term</i>	<i>Spring Term</i>
Running (Potato Relay)	Running (Class Running)
Chinning the Bar	Combination Dip
Standing Broad Jump	High Jump

This is a form of inter-school competition to which no objection against girls taking part can be raised, since the contests take place entirely within the school. We therefore recommend the following program for general adoption:

GIRLS

*Fall Term***Running****(Shuttle Relay)****Basket Ball Throw****(for distance)****Serving in Tennis***Spring Term***Running****(Class Running)****Pitching Baseball****(at target)****Basket Ball Goals**

V. THE ORGANIZATION OF MONTHLY INTER-CLASS MEETS

THE first thing to do is to organize an Athletic Association, as provided for in the By-Laws of the Board of Education. Dues of five cents a month will provide a liberal fund for all expenses. In fact, it is feasible to assess dues of five cents monthly—as low as twenty, or even fifteen cents for the term, if paid in advance.

Having formed an Athletic Association, arrange a series of four monthly Inter-Class Athletic Meets to be held in the gymnasium or school yard,—outdoors, whenever possible. Select an interesting program of events and announce that only those classes that have 80 per cent. or more of paid-up membership in the Athletic Association will be allowed either to compete or to *witness the games*. When there are several classes in each grade it is well to confine the competition to classes of the same grade. But this is not necessary

nor always practicable. At any rate, it is desirable that classes of the Fifth and Sixth years compete in one cycle called "Junior," and the classes of the Seventh and Eighth Years in another, called "Senior." A set of simple felt banners, lettered "Inter-Class Champions," to be awarded to the winning classes in the "Meet" to be held during the following month, will furnish added incentive for keen competition.

From the list of events described in Chapter III, an interesting and varied program may be arranged for each month. The organization is simple. Two things are required; namely, to so arrange that as many events as possible are going on at the same time, and to have lists prepared (preferably, on stiff cardboard) giving (a) Date; (b) Event; (c) Class; (d) Register; (e) 80 per cent. of Register; (f) Names of all on Register (those excluded being plainly marked). (*See Plate 41.*)

In all events except Class Running and Potato or Flag Relay Races, all members of the class who are not excluded by the doctor's orders should be allowed to compete. Every

INTER-CLASS MEETS

Term, 191		Class		Room		M		Teacher	
NAMES BOYS*	FIRST MONTH		SECOND MONTH		THIRD MONTH		FOURTH MONTH		
	Reg.	No Comp.	Reg.	No Comp.	Reg.	No Comp.	Reg.	No Comp.	
	Event		Event		Event		Event		
<i>J. Smith</i>									
<i>Wm Allen</i>									
<i>Th. Brown</i>									
<i>R. Alkins</i>									
<i>Etc.</i>									

PLATE 41. — SCORE CARD
MONTHLY INTER-CLASS MEETS

one should get a chance, if at all possible. In computing the average of the class, however, we strike out the records of the poorest performers, counting the records of only 80 per cent. in each class. This 80 per cent. rule should be strictly interpreted. For instance, a class of forty may reject 8, counting 32. A class of 45 may reject 9, counting 36. But a class of 44 may reject only 8, counting 36. We do not estimate fractions of a boy.

In the Class Running or any form of Relay Race, the class team must be reduced to 80 per cent. before starting, as individual records are not generally taken. The total elapsed time, divided by the number competing, constitutes the class average. The beauty of this system is that it makes very little difference how large or how small a class may be. The basis of comparison is always the same, namely 80 per cent. of the register on the day of the Meet.

It is feasible, of course, and very desirable to time each runner separately with a stop watch. It adds to the interest when each one knows his own time. In that case all may be allowed to run, quite as in other events.

A little study of the diagrams on pages 91 and 93 will show an Inter-Class Meet in the most difficult organization possible; namely, a mixed school, in which thirty-two groups, representing sixteen classes, are taking part in eight different events at one and the same time. A program of this kind is usually finished in about an hour. Taking the last period on one Friday afternoon a month, finishing about 3:30, you have an event that the children will look forward to with great pleasure and which the teachers cannot consider a great hardship.

SUGGESTIONS

1. The organization of an Athletic Association should be as democratic as possible. The election of officers is unnecessary, but the election of squad leaders and class delegates is very important.

The class delegate is the one who collects the dues and turns them over to the Treasurer, — usually a teacher who is sufficiently interested to take the necessary trouble to keep the accounts. The class delegate may or may not be a squad leader. The selection

of squad leaders has already been explained under "Organization of the Physical Training Period."

2. Meetings of Class Delegates and Squad Leaders should be held occasionally to discuss questions of program, scoring, handicapping, trophies, etc. The success of the system depends on keeping close to the children, consulting their preferences, getting their ideas and acting upon them, as far as may be done without losing sight of the aim in view; namely, all-round physical training. The program of exercises should in all cases be a well balanced one. And that is where the judgment of the Director must correct and guide the impulses of the children.

3. Class Delegates must be trained to collect dues and take them to the Treasurer at stated times. Membership cards should be provided, which the Treasurer will stamp or punch as dues are paid. It is well worth while to make a substantial reduction in dues when the term is paid in advance, in order to save the trouble of collecting the nickels each month and keeping the accounts straight.

4. The program of events for a monthly Meet should be selected from the exercises taught in the regular physical training period. It should be announced about a week in advance of the Meet, so that classes may have a little time for preparation, but not more than a week ahead, because one of the aims of the system is to avoid specialization and to work always for all-round physical development.

Even where it is deemed advisable to add a few individual events to the Inter-Class contests, to give the star athletes a chance to scintillate, these events should be selected from the regular physical training program, and they should be announced at the same time as the Inter-Class events,—being considered merely as an added attraction, a sop to the hero-worship instinct, which has been so overdeveloped in athletics.

5. Some of the exercises described in subsequent chapters call for special apparatus not provided by the Board of Education. But a healthy athletic association, based on regular monthly meets in which every one takes an active part, will soon provide all

the apparatus necessary. When we started this system we were very careful to keep down expenses, but once having aroused the interest of the children by providing them, one and all, with an opportunity to engage in real athletic competition, the question of expense ceased to be a problem. Given a program of events that appeals to all, the Athletic Association will finance the game. Starting with a selection of exercises that require little or no special apparatus, the program can be gradually enlarged as funds become available.

6. It should be clearly understood from the beginning that this system applies to boys and girls alike. The girls have their own athletic association precisely as have the boys, and they are in every way on exactly the same footing. The girls do not compete against the boys, but in mixed classes the points won by the boys added to the points won by the girls constitute the class score. Naturally, the list of events for girls differs somewhat from that for boys. In the regular physical training period boys and girls practice separately; but in the monthly meets we have found it entirely

practicable to have the events for boys and girls going on in the school yard at the same time. The interest in the events is so general that there is little or no evidence of undue interest in one another. That, however, is a mere detail.

7. The following list of exercises has been thoroughly tried out and found to be entirely satisfactory:

For Boys and Girls

Class running, Potato, Flag, or Shuttle Relays
Shooting Goals with Basket Ball
Pitching Baseball at Target
Chest Expansion
Strength of Grip

For Boys Only

Standing Broad Jump
Running High Jump
Hop, Step, and Leap
Chinning the Bar
Combination Dip
Trunk Lifting
Shot Put

For Girls Only

Basket Ball Throw
(*for distance*)
Serving in Tennis
(*placing the ball
within a given space*)
Driving in Golf
Putting in Golf

The exercises in the last list are, of course, just as appropriate for boys; we reserve them for the girls simply because the boys, as it is, have so much more on their program. The

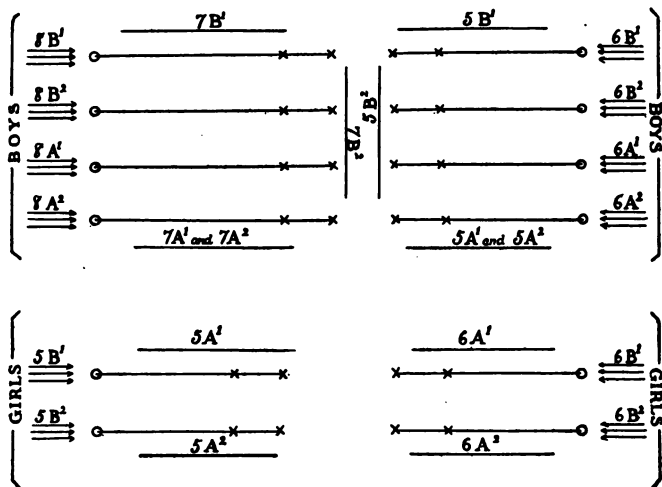


PLATE 42. — FLOOR PLAN: POTATO RACE

Combination Dip (modified) and Trunk Lifting are excellent exercises for girls, also, but for the difficulty of keeping their clothes clean.

8. The following program is typical, giving the events, the classes to compete in each event, and the teachers assigned to take charge of each group. The diagrams show

PROGRAM AND ASSIGNMENTS

MONTHLY INTER-CLASS MEET

FRIDAY, FEBRUARY 23, 1917

AT 2:20 P.M.

*Boys**Girls*

8B vs 8A — High Jump

Pitching

Mr. C.....

Miss C.....

Mr. S.....

Miss H. S.....

7B vs 7A — Combination

Basketball Throw

Dip

Miss Y.....

Miss H.....

Miss McN.....

6B vs 6A — Basketball

Goals

Grip

Mr. R.....

Miss K.....

Miss C.....

Miss K.....

Miss M.....

Mrs. W.....

Chest Expansion

5B vs 5A — Chinning

Miss C.....

Miss L.....

Miss S.....

Mr. C.....,

in general charge

Mr. F.....,

clerk of course

Miss M. S....., Overflow, Room 20¹

¹ Pupils who are not members of the Athletic Association have a study period in charge of a teacher.

the position of each group in the school yards. Generally speaking, the classes competing in each event form a hollow square about the position assigned to them. (See Plates 42-43.)

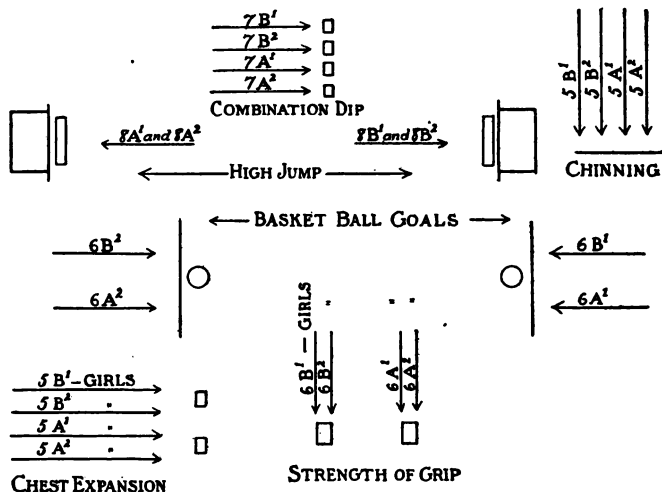


PLATE 43. — FLOOR PLAN: FIELD EVENTS

The arrangement here shown is for a meet in the winter, held entirely indoors. Twenty-four groups compete in the inner playground, eight in the gymnasium upstairs. When the weather permits, we use the outer yards and the street, having no classes in the gymnasium.

VI. THE POINT SYSTEM AND INDIVIDUAL CLASSIFICATION

RATIONAL ATHLETICS is a system of physical training through athletics. That is, it is a carefully arranged series of exercises designed to give a good all-round physical development. And it is more than this. It is designed to give every boy and girl at least elementary training in some wholesome outdoor sports which they will be likely to follow up after they leave school. It is an application of the doctrine of interest to the problem of physical training; an attempt to substitute for formal gymnastic work, which does not appeal to our young people, a system of exercises that will give them better results and a lot of fun at the same time. It is, moreover, an attempt to substitute an all-round training for the "specialization" that is so common in athletics to-day.

In the preceding chapters we have described Rational Athletics in its simplest forms; first, as an interpretation of the

course of study; second, as an improved system of "Class Athletics" for competition between schools; and, third, as a method of conducting Inter-Class Athletics within the school. Nothing has been said, so far, about a point system, minimum or maximum limits, grade standards, individual classifications, or individual record cards. In an earlier book on this subject (*Rational Athletics for Boys, 1915*) the impression was unfortunately given that there was, necessarily, a great deal of complicated bookkeeping which, naturally, caused many principals and teachers to hesitate in undertaking it at all. The preceding chapters of this book, however, show how any or all of the exercises described may be used with great benefit and enjoyment without at all going into the point system or the keeping of individual records. Our advice to any school taking up the system is to begin as described in the preceding chapters. After the children have become somewhat proficient in a number of the exercises, and after the teachers have acquired some experience in handling large numbers of competitors in a reasonable amount of time, the advantage of the point

system and the individual classification will become apparent. It will then be comparatively easy to introduce them.

THE POINT SYSTEM

As previously explained, the system of Rational Athletics began as a development of Class Athletics. Consequently, in applying it, we thought always in terms of classes or grades. A set of minimum-maximum standards was worked out, based on what an average boy in a given grade should be able to do after a reasonable amount of practice. This method worked well enough for a time, but before very long it proved unsatisfactory for two reasons:

1. It sometimes proved unfair in inter-class competitions, as the following typical instance will show. It happened one term, that the boys in our 8A classes were bigger and stronger than the boys in the 8B classes. In addition to this natural handicap, the grade system further handicapped the 8B boys, thus making the contest a walk-over for the 8A's. This sort of thing is likely to occur at any time, and is very discouraging.

2. It is sometimes unfair to the individual. For instance: A bright young boy in an 8B class was compelled to meet standards arranged for boys much bigger and older than he, whereas a big over-age fellow in a class with younger pupils found the grade standards so easy that the whole thing was a joke, so far as he was concerned. Under these circumstances the little fellows lost interest because they felt themselves outclassed, and the big fellows, because the work was too easy.

In view of these unfortunate results we realized that we must find a system of handicapping that took into consideration the age, grade, height, and weight of each pupil. This seemed such a complicated matter that we hesitated to attempt it. But one day the solution came like a flash, and to-day any boy or girl in our Fifth to Eighth Year classes can tell you to what athletic classification he or she belongs, and just what his or her handicaps are in each event. It is all printed on the membership card of the Athletic Association which each boy and girl carries. (*See Plate 44.*) The solution as worked out is as follows:

REVISED CLASSIFICATION FOR BOYS AND GIRLS

JUNIOR DIVISION—5-6 YEARS

Exponents	4	5	6	7	8	9
Grade		5A	5B	6A	6B	
Age—up to	10'	10'1—11'	11'1—6	11'7—12'	12'1—13'	13'1 or over
Height—up to	4'2	4'3—5	4'6—8	4'9—11	5'—5'2	5'3 " "
Weight—up to	64	65—74	75—84	85—94	95—104	105 " "

SENIOR DIVISION—7-8 YEARS

Exponents	4	5	6	7	8	9
Grade		7A	7B	8A	8B	
Age—up to	12'	12'1—13'	13'1—6	13'7—14'	14'1—15'	15'1 or over
Height—up to	4'4	4'5—8	4'9—5'	5'1—3	5'4—6	5'7 " "
Weight—up to	74	75—89	90—104	105—119	120—129	130 " "

EXAMPLE—Boy in 5B—Exponent for Grade 6 (see top line)

Age 10'—6 " " Age 5
 Height 4'10 " " Height 7
 Weight 84 lb. " " Weight 6

Sum of Exponents 24—"Class B."

CLASS A B C D E
 (Same for Senior or Jun. Div.) up to 21 22-25 26-29 30-33 34 or over

ATHLETIC ASSOCIATION

PUBLIC SCHOOL 33, THE BRONX

MEMBERSHIP TICKET

Name _____

Cl _____, Rm. _____, Term, 19 _____ } **ATHLETIC CLASS**
 (Indicate by check, ✓)
 A, B, C, D, E.
 Cl _____, Rm. _____, Term, 10 _____ } Junior.....Senior.....

SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE

PLATE 44. — REVISED CLASSIFICATION AND MEMBERSHIP CARD
 (Reverse of Plates 45-46)

REVISED CLASSIFICATION

1. As previously suggested, the classes are divided into two groups, one comprising the Fifth and Sixth Year classes, called "Juniors," the other, the Seventh and Eighth Year classes, called "Seniors." The exercises are, with a few exceptions, the same for both, but the competition is more intensive when confined to classes more nearly of an age.

2. The "exponents" are arbitrary numbers used to express the relationship between the various factors of grade, age, height and weight. They correspond roughly to the four grades in each group, — one "4," for under-age, under-height, under-weight children; and one "9," for over-age, over-height, over-weight children.

3. The first item in an individual record is "Grade," and this goes under the exponent 5 for 5A (Junior) or 7A (Senior), and so on up to 6B or 8B.

4. Age, in years and months, taken at the beginning of the term, in September and in February, is a matter of school record. The division into groups is based on the various

interpretations of "legal," "normal," and "over-age" pupils. It represents a compromise between the extremes and, we believe, will be found generally fair.

5. Height and weight are also taken at the beginning of each term, in September and in February, and, together with the other factors, Grade and Age, determine the individual pupil's athletic classification for the whole of the respective term. A spring balance, with handles, hung in the classroom doorway, is used for weighing. To obtain height, the pupils back up against a movable scale, allowance being made for the height of the shoe heel, so that an entire class is weighed and measured for the term in about ten minutes.

6. Having thus determined these four factors in each case, it is an easy matter to determine the classification. Indeed, the children can work it out for themselves, but it is well to have their results checked up by the teacher. It is a good lesson in arithmetic, but like any other test, should be carefully verified. It looks much more formidable than it really is. In taking height and weight,

fractions less than one half are disregarded, but one half or over counts as one.

7. The example which follows illustrates the method and applies to Junior and Senior alike. Given grade, age, height, and weight for each pupil, a glance at the schedule will give the proper "exponent" for each of these four factors. Adding the four "exponents" gives the "sum of exponents" which determines the classification, each group, Junior and Senior, being divided into five classes called A, B, C, D, and E, respectively. "A" represents the midgets; "E" the over-age, over-developed; while "B" "C" and "D" will be found to include the great majority.

8. It is worthy of note that the classification system is the same for boys and girls. One would naturally surmise that boys would be taller and heavier than girls, as they generally are, later in life. But after carefully plotting the height and weight figures in hundreds of cases, we found that we could not tell which group stood for boys, and which for girls, without looking at the top line where this fact was recorded. As is well known, girls mature about two years earlier

than boys. Because of this fact, girls of the age usually found in the last four years of the elementary school are, on the average, so far ahead in the stage of adolescence that they average in height and weight practically the same as the boys.

9. On the back of the same card we have printed the list of events, with the handicaps for each class, both Junior and Senior (*See Plates 45 and 46.*) By consulting this card each boy and girl knows immediately the standards he must meet in each event. The establishment of this classification system produced a very evident feeling of satisfaction among the boys and girls. The bright little ones who were away beyond their grade felt that they were not being penalized for having brains. On the other hand, the big, husky, below-grade fellows found themselves matched against boys of their own kind, regardless of scholarship. The standards adopted for each group are the result of a careful study of results attained. They may have to be modified slightly in time; but we are inclined to believe that the changes, if any, will be very slight.

It must be borne in mind, however, that the pupils from whom these results were obtained have had the benefit of training in most of these events for two years or more. A school beginning this work would probably find these standards too high. It is quite feasible for them all to be lowered one step by dropping "Class B" down to the "A" standards and making a still lower standard for "A" pupils.

10. In conducting an inter-class meet, on the basis of the individual classification, which is, after all, the only really fair way, all that is necessary is to arrange the names of the contestants on the score card in such a way that all the "A" boys come first, then the "B" boys, and so on, each group being clearly marked. The teacher in charge of the event having three or four classes to test, will test the "A" boys of all the classes, putting their records down opposite their names; then all the "B" boys, and so on. This may seem somewhat complex, but in practice it will be found very simple. As in everything else, a little forethought and preparation will make things go easily and quickly.

RATIONAL ATHLETICS FOR BOYS

(Standards adopted September, 1916)

Posture and Alertness	Min.	Max.	Class	A	B	C	D	E
Hygiene	0	10						
I. Running			Standards:					
Potato Race			(Jun. distance, 224 ft.; Sen., 304 ft.)					
Min. 5 pt.; 2 pt. for every sec. under the standard.			Jun. 26 sec.	24	22	20	18	
or, Dash			Sen. 32	30	28	26	24	
Min. 5 pt.; 2 pt. for every 1-5 sec. under the standard.	5	15	(Jun. distance, 40 yd.; Sen. 80 yd.)					
II. Hop, Step, and Leap			Jun. 9 sec.	8½	8½	8	7½	
Min. 5 pt.; 1 pt. for every foot over the standard.	5	15	Sen. 12 "	11½	11½	11	10½	
III. Broad Jump			Jun. 14 ft.	15	16	18	20	
Min. 5 pt.; 2 pt. for every 3 in. over.	5	15	Sen. 18	19	20	22	24	
IV. High Jump			Jun. 4'6"	4.9	5	5.3	5.9	
Min. 5 pt.; 1 pt. for every in. over.	5	15	Sen. 5'3"	5.6	5.9	6	6.6	
V. Chinning the Bar			Jun. 2'6"	2.8	2.10	3.	3.2	
Min. 5 pt.; 1 pt. for every pull-up over.	5	15	Sen. 3-	3.2	3.4	3.6	3.8	
VI. Strength of Grip ..			Jun. 3	4	5	6	6	
Min. 5 pt.; 2 pt. for every 5 lb. over.	5	15	Sen. 5	6	6	7	7	
VII. Shot-Put			Averages of right and left hands:					
Min. 5 pt.; 1 pt. for every foot over.	5	15	Jun. 25 lb.	30	35	40	50	
VIII. Combination Dip			Sen. 45 lb.	50	55	60	70	
Min. 5 pt.; 1 pt. for every Comb. Dip over.	5	15	Jun. —	—	—	—	—	
IX. Trunk Lifting			Sen. 16	18	20	23	26	
Min. 5 pt.; 1 pt. for every lift over.	5	15	Jun. 3	4	5	6	7	
X. Chest Expansion .			Sen. 6	7	8	9	10	
Min. 5 pt.; 2 pt. for every ¼ in. over.	5	15	Jun. 4	6	8	10	12	
XI. Pitching			Sen. 8	10	12	14	16	
3 pt. for every ball put "over the plate;" no minimum.	0	15	Jun. 1¾ in.	2	2¼	2½	2¾	
XII. Basket Ball Goals			Sen. 2½ in.	2¾	3	3¼	3½	
No min.; 1½ pt. for every goal shot in the given time.	0	15	Distance from Target:					
			Jun. 26 ft.	28	30	32	35	
			Sen. 30 ft.	35	40	45	50	
			Time Allowed:					
			Jun. 60 sec.	55	50	45	40	
			Sen. 50 sec.	45	40	35	30	

* The Juniors do not have the Shot Put. In order to equalize the score, they are allowed to make 20 pt. each in Hop, Step, and Leap, Broad Jump, and High Jump.

RATIONAL ATHLETICS FOR GIRLS

(Standards Adopted September, 1916)

	Min.	Max.						
Posture and Alertness	0	10	Class	A	B	C	D	E
Hygiene	0	10	Standards:					
I. Running			(Jun. distance, 224 ft.; Sen., 304 ft.)					
Potato Race			Jun. 29 sec.	27	25	23	21	
Min. 10 pt.; 2 pt. for every sec. under the standard.			Sen. 37 sec.	35	33	31	29	
	10	20	(Jun. distance, 50 yd.; Sen. 80 yd.)					
or, Dash			Jun. 10 sec.	9½	9½	9	8½	
Min. 10 pt.; 2 pt. for every 1-5 sec. under the standard			Sen. 14 sec.	13½	13½	13	12½	
			(The measure is the mean between the right hand and the left)					
II. Strength of Grip ...	10	20	Jun. 20 lb.	25	30	35	45	
Min. 10 pt.; 2 pt. for every 5 lb. over the standard.			Sen. 40 lb.	45	50	55	65	
III. Chest Expansion ...	10	20	Jun. 1¾ in.	2	2¼	2½	2¾	
Min. 10 pt.; 2 pt. for every ¼ in. over the standard.			Sen. 2½ in.	2¾	3	3¼	3½	
IV. Basket Ball Throw	10	20	Jun. 24 ft.	26	28	30	32	
Min. 10 pt.; 1 pt. for every 2 ft. over the standard.			Sen. 30 ft.	32	34	36	40	
V. Pitching	0	20	Distance from Target:					
5 balls; score according to figures on the target; no min- imum.			Jun. 24 ft.	26	28	30	32	
			Sen. 30 ft.	32	34	36	40	
VI. Basket Ball Goals ...	0	20	Time Allowed:					
2 pt. for every goal shot in the given time. No minimum.			Jun. 60 sec.	55	50	45	40	
			Sen. 50 sec.	45	40	35	30	
*VII. Serving in Tennis	0	20	Distance from Net:					
5 balls; 5 pt. for hitting lower strip; 3 pt. for upper. No minimum.			Jun. —	—	—	—	—	
			Sen. 27 ft.	30	33	36	39	
VIII. Putting in Golf ...	0	20	Distance from Hole:					
5 balls; 5 pt. for each "put." No minimum.			Jun. 1 ft.	1-4	1-8	2-	2-4	
			Sen. 2 ft.	2-4	2-8	3-	3-4	
*IX. Driving in Golf ...	0	20	No. of Balls Allowed:					
5 pt. for every drive.			Jun. —	—	—	—	—	
			Sen. 9	8	7	6	5	

*The Juniors do not have Serving and Driving. In order to equalize the score they are allowed to make 25 pt. each in Grip, Pitching, Goals, and Putting; and the maximum for Posture and for Hygiene is 20.

VII. THE STANDARDS BASED ON INDIVIDUAL CLASSIFICATION

POSTURE, ALERTNESS, AND HYGIENE

By posture we mean the habitual carriage of the body, standing, seated, or walking. Each pupil is subject to a good or bad mark in Posture from any teacher at any time, just as in Conduct. These marks are taken cognizance of by the class teacher, in making up the individual record in physical training, just as he takes cognizance of Conduct marks in making out the regular Monthly Report.

Alertness, promptness in response to command in class work, as well as in the gymnasium, is marked in the same way. The fact that they are subject to bad marks in either or both of these things has an appreciable effect on the boy or girl who is trying to qualify in athletics. Posture and Alertness taken together count 10 points.

Hygiene is also marked on a basis of 10 by the class teacher and by the teacher of physiology, who may or may not be the same.

The class teacher's mark is an estimate of the pupil's habitual personal neatness. The other mark is supposed to represent the pupil's knowledge of the subject as taught.

The sum of the marks for Posture, Alertness, and Hygiene, a possible 20 points, furnishes a lever that can be used to good effect by the wise teacher.

CHEST EXPANSION

The regular setting up exercise prescribed for children in our public schools, to be done three times a day, begins and ends with "deep breathing." In order to put some motive into this breathing exercise, the writer began, years ago, to offer prizes to the classes showing the best averages in chest expansion as a result of daily practice in deep breathing. It would be difficult to find any habit that will pay richer dividends in life and health than this habit of deep breathing. Some one has rather wittily said that those who die of lung trouble, die "because they are too lazy to breathe," and there is more than a grain of truth in the remark. Telling children to breathe deeply is one thing; making a

game of it, a game which they will play to win, is quite a different thing. We have obtained some really remarkable results in this direction and we feel that nothing we have accomplished is more valuable, nothing more satisfying, than the knowledge that because of our efforts hundreds of children have begun to take pride in their ability to breathe deeply and to fully inflate their lungs.

The method of testing the breathing has been described in detail in the Chapter on "Teaching the Exercises." The standards here given, however, will be found quite reasonable. We have no desire to go to extremes in this any more than in anything else. This lack of extremes is one of the reasons why the system is called "Rational Athletics."

In all the exercises, limits are set beyond which no credit is given, in order to avoid overdoing one thing and neglecting something else. A high rating can be obtained only by good work in all the exercises.

In Chest Expansion a "Junior A" boy must show $1\frac{3}{4}$ inches expansion, measured below the shoulder blades, in order to qualify. If he makes $1\frac{3}{4}$ inches he gets five points; if

he fails to make $1\frac{3}{4}$ inches, he scores nothing. This idea of a minimum standard runs through most of the exercises and is very important. It is designed to put the pressure just where it is most needed, — upon the weaklings and the indifferent ones. It makes a big difference in a class average if several individuals, through weakness or lack of effort, fail to “qualify.” Their zeros pull down the class average very badly, with the result that the leaders immediately take a very lively interest in the tail-enders, encouraging the weak ones and driving the lazy ones to at least qualify. Many a weak, diffident boy or girl has been coaxed, coached, and “jollied” along by his or her classmates until that saving mark was earned; and then, finding that it could be done, they forthwith began to take a new pride in themselves, their improvement thereafter being often astonishing.

In Chest Expansion, 5 points are allowed for one who does the minimum for his group, and two points more for each quarter of an inch over the minimum; but no one is credited with more than 15 points. In the girls’

records, the minimum is 10 and the maximum 20, because of the smaller number of exercises, but the principle is exactly the same.

STRENGTH OF GRIP

In measuring strength of grip, we use a recording device consisting of an oval steel frame that fits the hollow of the hand, with a pointer that moves across the face of a disk on which a scale indicates the number of pounds pressure. Pupils are tested for the right hand and the left; the mean between the two is then taken and compared with the standard for that group. Those reaching the standard get five points. For every five pounds over the standard they get two points more. For instance, a "Junior A" boy who registers a mean pressure of 45 pounds — which is 20 pounds over the required minimum — would score thirteen points.

It must be borne in mind that these standards may be raised or lowered as they are found too high or too low. The object is to keep them always where practically all may, after reasonable practice, qualify; yet high

enough to make it interesting for the stronger and more skillful.

POTATO RACE

We use the Potato Race as our standard running event because it can be conducted indoors or out, depending on the weather, and because it has a maximum of physical training value which at the same time furnishes fun and excitement, also. The method of conducting the race will be found under "How to Teach the Exercises."

The distance for Juniors is 224 feet, in which they must place two blocks on the marks and bring them back to the basket. Standard time for a "Junior A" boy is 26 seconds, scoring 5 points, 2 points being allowed for every second he clips off the standard. If he takes longer than the standard time, he scores zero. Standard time for girls is 3 seconds more for Juniors, and 4 seconds more for Seniors.

Weather permitting, this event may be varied by straight-away sprints, 50 yards for Juniors; 80 yards for Seniors. The standard for 50 yards is 9 seconds for "Junior A,"

two points more being allowed for every fifth of a second clipped off this standard, up to the maximum of 15 points. Twelve seconds is standard for 80 yards, similar allowance being made for time under the standard. The runner who fails to make the distance in standard time scores zero. Standard time for girls is one second more for Juniors and two seconds more for Seniors.

STANDING BROAD JUMP

The minimum for a "Junior A" boy is 4 feet 6 inches, scoring 5 points, as before, one half of a point being allowed for every inch over the minimum. The boy who jumps 20 inches farther scores 10 additional points, making 15 in all, which, as in every other event, is the maximum number of points allowed.

HOP, STEP, AND LEAP

In this the minimum for a "Junior A" boy is 14 feet, one additional point being allowed for every foot over the minimum, up to 15 points.

BASKET BALL GOALS

Each player is given the ball for the length of time permitted under "Time Allowed" for his group. No one else must touch the ball during that time. After each "shoot" the player must recover the ball and "shoot" again as rapidly as possible and from any position he chooses. The element of chance enters so largely into this exercise, as also into Pitching, Serving, Putting, and Driving, that we have dropped in each of them the minimum standard, each pupil being allowed the number of points earned, up to 15, the maximum.

PITCHING

The boys pitch baseballs at a target consisting of a large piece of canvas, in which an opening 24 inches high and 15 inches wide is cut in such a way as to represent the space within which a ball must be placed to be over the plate and be called a "strike." Each boy gets 8 balls, three to "warm up," which are not counted, and 5 to score with. Three points are allowed for every ball he puts "over the plate."

The girls pitch at a regular target painted on a similar piece of canvas and hung in a corner of the gymnasium where flying balls will do the least damage. The bull's-eye counts 5; first ring, 3; second ring, 2; outside the rings but on the canvas, 1. Each girl throws 8 balls, three to warm up, and 5 to score. Five bull's-eyes would count 25, but only 20 points are allowed, as in the other exercises for girls.

HIGH JUMP

This is probably the most popular event with the boys. It is also the most difficult event for which to fix standards. It should be understood, therefore, that all the standards given here are subject to modification according to the actual conditions under which the work is done. As stated before, the minimum should be a mark that practically any pupil can work up to, with a reasonable amount of effort; but the maximum should be a mark that only the best can reach or surpass, bearing in mind always that the aim of this system is not to develop a few star performers, but to pull up the

average of all and, more especially, to bring out those who need training and encouragement most — the ones who are completely neglected and overlooked under the present system of intensive, individual athletics. When we come to describe the “Pentathlon,” the all-round individual championship, it will be seen that we have provided work a-plenty for the would-be “stars.”

A “Junior A” boy is at present required to clear only 2 feet 6 inches in order to qualify for the High Jump. He is given one additional point for every inch over the minimum, while a jump of 3 feet 4 inches will give him a perfect score, — 15 points. As the boys become more proficient, we expect to raise these standards, but at present we find them high enough.

SHOT PUT

This is a good, old-fashioned, manly outdoor sport. In order to make it reasonably safe in large classes and available indoors in bad weather, we use a six-pound medicine ball on which we have had the makers sew a little leather pocket, into which the boy slips

his fingers. This prevents the ball bouncing out of his hand when he makes his preparatory skip. We found that the Junior boys were not quite big enough to handle this to advantage, so we have reserved it for the Seniors. A "Senior A" boy is supposed to "put" the ball — not *throw* it — 16 feet in order to earn his 5 points. One point more is allowed for every foot over the minimum, 26 feet making a perfect score, or 15 points.

CHINNING THE BAR

This is one of the regular P. S. A. L. events, which we have retained, with this difference: We insist on a maximum (13 for "Junior A"; 17 for "Senior E"), because the exercise is so severely local in character that we prefer not to take chances in over-doing it. The "Senior E" boy who can chin himself 17 times is quite good enough at that sort of thing; we believe he should then be made to work at something else which will develop another set of muscles to a corresponding state of development.

The standards in this event show a marked difference from the standards in other events,

in that the "E" class boys are not forced to meet a steadily increasing minimum. The reason for this is that the greater weight of these boys — which may be a help in some things — is a decided handicap in this event. We came to this conclusion only after comparing results grade by grade, as shown in "Table of Results." (*Plate 47.*)

A "Junior A" boy who chins 3 times earns 5 points and one point more for each additional pull-up to the maximum, 15 points.

COMBINATION DIP

We regard this exercise as one of the best all-round exercises known. It brings into play, arms, shoulders, back, loins, and legs. It is hard at first, but the boys who once mastered it ran up such high scores that we had to set a limit.

A "Junior A" doing three Combinations scores 5, and one point more for each additional Combination, up to 15 points.

TRUNK LIFTING

This exercise, like the preceding one, is not particularly interesting or spectacular.

	CHINNING			BROAD JUMPING			COMBINATION DIP			HOP, STEP, & LEAP			TRUNK LIFTING			SHOT			PUT			DEEP BREATHING					
	F	Q	L	F	Q	L	F	Q	L	F	Q	L	F	Q	L	F	Q	L	F	Q	L	F	Q	L			
8B	8	9	0	1	16	0	7	10	0	0	17	0	1	4	12	6	11	0	25	35	2 ^{1/2}	4 ^{1/2}	0	17	0		
8A	17	12	1	5	25	0	7	18	5	0	30	0	2	1	27	11	18	1	14	24	24	34	1	25	4		
7B	7	12	0	3	16	0	4	3	12	2	17	0	2	0	17	9	10	0	13	23	23	33	0	19	0		
7A	7	18	3	4	24	0	8	9	11	4	24	0	1	4	23	16	12	0	12	22	22	32	0	23	5		
6B	10	21	0	5	26	0	15	15	1	5	26	0	2	2	27	23	8	0	11	21	21	31	2	28	1		
6A	4	18	1	1	22	0	5	15	3	1	21	1	4	2	17	19	4	0	10	20	20	30	0	21	2		
5B	7	31	0	3	35	0	21	17	0	14	24	0	7	1	30	17	20	1	9	19	19	29	1	37	0		
5A	13	21	0	4	30	0	15	19	0	13	20	1	6	3	25	28	6	0	8	18	18	28	1	33	0		
TOTALS	73	142	5	26	194	0	82	106	32	39	179	2	25	17	178	129	89	2	25	17	178	129	89	2	5	203	12
PER CENTS.	33	64.5	2.5	11.8	88.2	0	37	48.2	14.5	17.7	81.3	.9	11.3	7.7	81	58.6	40	.9	2.2	92	92	92	54				

PLATE 47.—TABLE OF RESULTS

But they both have great physical training value, especially for trunk muscles which are not often reached and which have a very important influence on good carriage and general vitality. One of the best features of the system is that the interest aroused by the inter-class competitions, and the struggle for a good individual record (and the insignia that go with it) drive boys to practice even these less interesting exercises in order to score the resulting points that may be obtained.

A "Junior A" boy who lifts his body clear from prone to sitting position 4 times earns 5 points, and one point more for each additional lift, to the maximum, 15.

This completes the list of exercises that have been arranged for boys.

These 12 events with a maximum of 15 points each, together with the 20 points that may be awarded for Posture, Alertness, and Hygiene, give a total of 200 points, a number which is readily convertible into *per cent.* figures. It is possible to give as accurate and as satisfactory a rating in Athletics or Physical Training as in Arithmetic or Grammar.

EXERCISES FOR GIRLS

Putting in Golf. — By the use of a Parlor Golf Green consisting of an inclined plane near the top of which a cup is sunk, we are able to approximate very closely the character of stroke that is necessary for putting in the real game. The distances from which each group must “put” are marked on a strip of felt, fastened down the middle of the plane. Five balls are allowed, each successful put counting 5 points, up to a maximum of 20; four good puts out of five attempts is considered a perfect score.

Serving in Tennis. — Two strips of cloth, one 8 feet long and 18 inches wide, the other the same length but only 12 inches wide, are tacked one above the other against a flat wall on the side of the Gymnasium. Standing at distances varying from 27 feet to the regulation 39 feet, the girls try to hit these strips of cloth with tennis balls, using a regular tennis racket. The cloths are hung at such a height as to represent fairly well the space over a tennis net, within which a ball must be placed in order to strike inside the

service court. A ball striking the lower strip, which is supposed to be close to the net, counts 5 points; one striking the upper strip is considered to be not quite so good a service, and therefore counts only 3 points. There is a possibility of making 25 points, but 20 is the maximum number allowed, as in all other events. This event and the following one are confined to the Senior girls (7th and 8th years).

Driving in Golf. — For practice in Driving we have a regular indoor cage such as is used in schools for teaching golf. Plainly marked on the heavy canvas at the back of the cage is a large oblong space, representing the space within which a ball striking may be considered to have been “driven” true and straight. The distance for all is necessarily the same; but an “A” girl is allowed 9 balls, while an “E” girl is allowed only 5. Five points credit is given for every ball that strikes square and *hard* within the outlined space up to a maximum of 20 points.

Outside of this space is a larger one. A ball striking within this larger field is considered “fair,” and is given three points. A ball

striking the canvas outside the larger space is given one point.

Physical training teachers who have observed the work of our boys and girls have been unanimous in declaring that the girls' program was much more interesting than the boys'. Girls have never, since the days of the ancient Greeks, received a square deal in the matter of athletics. When we began looking for events that would make an attractive and effective program for boys, we had only to adopt and adapt the things that boys were already used to doing. When it came to girls, however, we found so few events that were attractive and *suitable* that we had to *invent* some. Consequently our program for girls presents some novelties, and novelties are always interesting.

In the selection of an exercise three tests are invariably applied:

1. Will it interest?
2. Will it help to all-round development?
3. Is it practicable?

We can say for all the exercises here listed that they have met these three tests, some for over six years, the latest for more than two.

VIII. COMPETITION IN SCHOLARSHIP AND ATHLETICS

THE main source of trouble in athletics of the usual intensive kind (team athletics) is the enforcement of eligibility rules. In Rational Athletics we have no eligibility rules. Every boy and girl in the grammar grades is eligible for all the physical training the school can give. The only exceptions to this rule are that only members of the Athletic Association who have paid their dues may take part in the Monthly Meets or in the Pentathlon, which will be explained in the next chapter.

We felt, however, that the very general and very lively interest in athletics which we had succeeded in arousing ought to be made use of as a lever to raise the standard of scholarship. By a modification of "The Wyoming Idea," introduced by Lieut. Steever, U. S. A., we proposed, more than a month after the term had started, that awards should be made as follows:

1. A bronze button to those who attain

a high standard (say 160 points) in athletics during the term.

2. A silver button to those who attain a similar high standard in scholarship.

3. A gold button to those who attain a high standard in both.

As first arranged, these buttons were to be awarded to the members of the squads that attained the highest averages. This resulted in an immediate general reorganization of the squads. The gold buttons were what all wanted, and scholarship forthwith took on a sudden and new importance. A new election for squad leaders was held, and these in turn selected their squads, choosing first those whose names stood highest on the Honor Roll for scholarship. It was really amusing to see the sudden change of front. The first two were easily picked. When it came to the third leader's turn to pick, he dived into his pockets, pulled out the school bulletin, and eagerly scanned the Honor Roll before making his choice! These squad leaders were willing to take a chance on working up their squads to a high standing in athletics during the term, but they did not

want to pick "dubs" who were good for nothing but athletics. As a result, in this reorganization, the boys who would ordinarily be snapped up *first* were selected *last*. The suddenness and the unanimity with which these squad leaders acted was a revelation to the writer, making him feel that he had made a "ten strike" in inaugurating this competition. And experience amply confirmed this first impression.

We realized before long that to consider the squad as the basis for awarding individual buttons was wrong. We, therefore, changed to the new basis the following term, retaining the squad formation, however, and awarding a small banner, suitably inscribed, to be retained by the leading squad during the month, or until won by some other squad. The buttons are awarded to the individuals attaining the required standing, regardless of the squad connection. In this way we get both the value of organization, coöperation, and leadership in the struggle for the banner, and the incentive to individual effort, regardless of the failure of the squad, in the struggle for the button.

This competition is confined to the seventh and eighth years, and is necessarily based upon the point system and upon individual classification. The number of points attainable in physical training is 200. For greater flexibility in marking the minor subjects, the maximum in scholarship is 300. Consequently in a competition of this sort, physical training and mental training take almost equal rank. This, it seems to us, is as it should be. We all subscribe to the ancient motto: "A sound mind in a sound body," yet how far we fall short of this aim in our school work! On the one hand we have the school, just beginning to recognize physical training in a perfunctory sort of way and as a very minor subject; and on the other we have the Athletic Association, heaping honors, insignia, and applause on the members of its "teams" for success in athletics alone.

In our system, the boy or girl who earns a bronze button for athletics, a silver button for scholarship, or a gold button for both, earns also the right to wear on cap, sweater, *or middy blouse*, the official emblem of the

school — a felt monogram “33” in a modified circle, in the school colors, blue and white. (*Plate 48.*)



PLATE 48. — THE SCHOOL EMBLEM

The winner of a bronze or silver button in the 8A grade (first half of the 8th year) may qualify for a silver or gold button, respectively, in 8B. But no one is awarded two buttons of the same order. No one but the

winner of a button is allowed to wear the official monogram of the school.

The two points we wish to emphasize, even at the risk of tiring by repetition, are:

1. That in this system of Rational Athletics, scholarship and physical training are on practically an equal footing.

2. That boys and girls are on exactly the same footing, receiving the same kind of training (with somewhat different exercises), and the same rewards.

IX. THE PENTATHLON

THE Pentathlon, as its name implies, is a competition in five events, constituting an all-round championship. The Pentathlon and the Decathlon (ten events) come down to us from the days of the Ancient Greek Olympics, having been revived and somewhat modified in our modern Olympics. Taking the same idea, and adapting it to our conditions, we have worked out a Pentathlon, — an all-round championship for boys and one for girls.

A few years ago we attempted to make this the basis of inter-school competition. but, finding that the program was too heavy, we have come back to the modification of the "Class Athletics" idea, proposing three events for inter-school competition each term, as outlined in a previous chapter.

While our main effort has been to bring up the general average and to encourage especially the weak and diffident, we nevertheless know that the instinct for hero-wor-

ship is strong in all of us; and that the crowd likes to watch the "stars" perform. It would be foolish to ignore or attempt to stifle this instinct. We have, therefore, given it room for full expression in the Pentathlon.

Only those pronounced physically fit by the school physician and the teachers of physical training, and having their parents' consent, are allowed to enter this contest. It takes place twice a year, at the regular meet in January, and on our Field Day, after the inter-class contests have been decided. The Board of Education allows each school to take one day in the Spring for organized games outdoors, and provides the fields suitable for such outings.

About two weeks before the date of the Field Day, the five events that are to constitute the Pentathlon are announced. Some time is given by teachers, after school hours, to coaching the candidates. This is the extent of our single concession to the idea of developing star athletes. On our last Field Day, twenty-five boys and twenty-five girls competed in the Pentathlon. Gold, silver, and bronze medals were awarded to first,

second, and third winners, both boys and girls.

The program for boys consisted of:

1. 80 yd. Dash
2. High Jump
3. Shot Put
4. Hop, Step, and Leap
5. Combination Dip

For the purposes of the Pentathlon, the maximum limits were removed, except on the Combination Dip, the limit on which was raised to 20. In the dash, the boys ran in pairs, being timed separately, and awarded points according to the point system. Similarly, points were awarded in the other events according to the classification of the individual, the limit of 15 points being disregarded.

The girls' program consisted of :

1. Potato Race
2. Basket Ball Throw
3. Basket Ball Goals
4. Serving in Tennis
5. Pitching

In these events, also, the limits were removed and each player was awarded the

number of points won according to her individual classification. One teacher acted as scorer. Results were handed to him by the teachers in charge of the different events, and a few minutes after the last event was finished the names of the winners were announced.

Several of the individual performances in these contests were remarkable. But still more remarkable was the fact that the very considerable degree of strength, skill, and endurance shown by these boys and girls was not the result of special coaching, but was merely the product of each day's work in their regular physical training.

Rational Athletics has, in fact, so welded together physical training and athletics, that our physical training period has taken on a new life as the result of the natural interest in athletics, while our athletic exhibitions, on the other hand, are exclusively the product of our regular physical training work.

X. TROPHIES AND PRIZES

By "trophy," we understand some permanent sign of victory, such as a banner, plaque, picture, piece of statuary, cup, or other object that remains in the possession of a class or a school until captured by some other class or school.

By "prize," we understand a medal, pin, button, or other emblem of victory which, after being presented to an individual, becomes his property.

One of the worst features of "amateur" athletics, as generally conducted, has been the number and the intrinsic value of the prizes offered. Strictly speaking, an amateur should not receive a prize of any intrinsic value whatever; at least, this is our belief. We have compromised for the present with what we regard as an evil, in that we do present gold, silver, and bronze medals to the winners of the all-round championship of the school twice a year. The buttons which we present to all who reach a high standard

have an intrinsic value, also, but not enough to be considered as violating the principle above laid down. Moreover, no individual can ever win more than one button of a kind.

With these ideas in mind we propose the following scheme of trophies and prizes to cover the various phases of the work, and the various plans under which Rational Athletics, as a system, may be operated.

FOR THE NEW FORM OF CLASS ATHLETICS

We propose that the P. S. A. L. present eight sets of plaques, instead of four, as at present. A headpiece, with pendent bars for each grade, would prevent cumbersome duplication in the case of a school winning trophies in several grades. By means of this device, it would be practicable to have two sets, one for Fall and one for Spring. Some friends of our school provided the funds for such a double set of trophies a few years ago. The use of these plaques has been discontinued for reasons explained elsewhere, but the idea is practicable.

FOR INTER-CLASS MEETS

Two felt or silk banners, lettered "Inter-Class Champions," one for "Juniors" and one for "Seniors," will be sufficient. It is worth while to have these banners mounted on poles so that they may be carried on occasions, by the classes holding them. On Field Day especially, the classes then holding the banners should be allowed to march onto the field and plant the banners in front of the grand stand. At the close of the games, the winning classes should take possession of them and march off the field with them.

Where individual ratings are given, it is advisable to have two smaller banners or pennants, marked "Inter-Squad Champions," Seniors and Juniors, to be held by the squad showing the highest averages for the preceding month. This applies whether the competition is solely in athletics or in the combination of scholarship and athletics. It is important to furnish some incentive for the squad to work together. The weaker ones then get encouragement and assistance from the stronger, and there is oppor-

tunity for training in leadership and teamwork.

PRIZES FOR HIGH RATING IN ATHLETICS

To every boy or girl attaining a high rating in athletics should be given a pin or button indicative of that fact. It is well to have a number stamped on the back of each button, and a register kept showing to whom each numbered button was given. Boys especially are strange creatures. They will trade anything they possess for anything that takes their fancy. Then, sometimes, bullies take things from other boys. Unless a tally is kept, it is impossible to prove ownership. With a carefully kept register, we can be sure that no boy dare wear a button bought or stolen from another.

At first we gave a silver button, showing the figure of a boy putting the shot or of a girl throwing a basket ball, with the letters R. A., indicating Rational Athletics, and the number of the school. More recently we have adopted a monogram for the school and, following the custom of the Universities, we award a button bearing this monogram to

those attaining a satisfactory rating. With this button goes the right to wear the school's official monogram on the cap, sweater, or middy blouse. Our young people are quite as proud of that honorable distinction as the young man at Yale or Harvard is of the "Y" or "H" blazoned on his sweater.

As explained elsewhere, we have carried this idea farther, and now present a bronze button to those who excel in athletics, a silver button to those who excel in scholarship, and a gold button to those who excel in both. With each of these buttons goes the right to wear the school monogram. Those who win it for athletics alone wear the monogram plain; those who get it for scholarship may add an edging of silver braid; those who get it for both may use an edging of gold braid. This feature is optional.

The plan of awarding a button and insignia we commend to all schools that take up Rational Athletics seriously enough to have a basis for awarding individual prizes. If, later, they take up the Scholarship and Athletics idea, they have only to duplicate the same design in silver and in gold. When

we say "gold," we mean, of course, a good quality of gold-filled button, which will be found to give very satisfactory service.

The award of individual buttons, we believe, should be reserved for the 7th and 8th years. This prevents duplication and the cheapening of the prize by making it too common.

All these things cost money, to be sure. But the interest in the Monthly Meets, with a good lively program, is sufficient to maintain an athletic association that can easily provide the necessary funds. This is true not merely of the school in a well-to-do neighborhood. In a 6B school in one of the poorest sections of the city we had, under this system, over 700 members out of a possible 1000. Because our boys were poor, however, the Association provided 50 running suits, 50 pairs of leather running shoes, and 25 bathrobes for our track and field team in the district meet.

PRIZES FOR THE PENTATHLON

As before stated, we have presented gold, silver, and bronze medals to holders of first, *second*, and third place in this semi-annual

